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An Investigation into Trauma Exposure, Emotion Regulation, Resilience and Psychosocial Outcomes in Older People:

A Research Portfolio

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Thesis submitted for the degree of Doctor of Clinical Psychology

May 2015



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1. Thesis Abstract

Objectives: A systematic literature review was conducted to investigate whether aging impacts on emotion regulation and whether there are relationships between aging, emotion regulation and psychosocial outcomes. An empirical study used a cross-sectional quantitative design to examine the nature of trauma exposure in a clinical group of older people. A novel model was developed to investigate the relationship between trauma exposure and psychosocial outcomes and to examine whether emotion dysregulation and resilience had a role in this relationship.

Method: The search strategy used in the review identified 15 relevant papers which met the inclusion criteria which were assessed for quality and relevant findings extracted. The empirical study recruited 47 participants from psychological therapy services who completed six self-report measures of trauma exposure, resilience, emotion dysregulation, PTSD symptoms, quality of life, anxiety and depression. A bootstrapped corrected procedure was used to test the indirect effects of resilience and emotion regulation.

Results: Results of the review indicated that older people used positive reappraisal more than younger people. Examining the relationship between age, emotion regulation and psychosocial outcomes was difficult because of differences in the nature of relationships investigated, the definition and measurement of variables and additional variables examined. Results of the empirical study indicated trauma exposure to be reported by all participants and to be directly related to PTSD symptoms. Further analysis indicated that emotion dysregulation partially mediated this relationship. Trauma exposure was not directly related to anxiety, depression and quality of life but was indirectly related through emotion dysregulation. Resilience was not found to be associated with trauma exposure.

Conclusions: The review highlighted the complexity of the relationship between age, emotion regulation and psychosocial outcomes. Results of the empirical study improved understanding about the nature of trauma exposure in a clinical group of older people. It also supports the importance of emotion dysregulation as an intervening variable in the relationship between trauma exposure and psychosocial outcomes. Clinical practice issues and areas for future research were identified.

2.1 Chapter 1: Systematic Review

The Influence of Age on Emotion Regulation Strategies and Psychosocial Outcomes: A Systematic Review

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This review was completed as part of a Doctorate in Clinical Psychology undertaken with the University of Edinburgh and NHS Tayside Psychological Therapies

Produced according to submission guidelines for Aging and Mental Health (*Appendix 1*)

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2.2 Abstract

Objectives: Empirical research has evidenced the role of emotion regulation in psychosocial outcomes. Theories have emerged which explain how aging impacts on the use of emotion regulation and the impact this has on psychosocial outcomes. Whether empirical research supports these theories is unclear. This study aimed to systematically review the evidence for the impact of age on emotion regulation and to examine whether there are relationships between age, emotion regulation and psychosocial outcomes.

Methods: Database searches identified 15 relevant papers which met the inclusion criteria. These were assessed for quality and relevant findings extracted.

Results: The papers were all of reasonably high quality but varied in their methodologies. Differences existed within the nature of relationships investigated, in the definition and measurement of variables and additional variables examined. Difficulties in synthesising findings and deriving conclusions about the relationships between age, emotion regulation and psychosocial outcomes resulted from this. The current evidence base indicates that older people may make greater use of positive reappraisal than younger people. How this impacts on psychosocial outcomes is unclear.

Conclusions: The review highlights the complexity of the relationship between age, emotion regulation and psychosocial outcomes. Further work is required to improve understanding of these relationships within a developmental context. Implications for theoretical models are discussed. Clinical practice issues and areas for future research are also identified.

Keywords: age, emotion regulation, psychosocial outcomes, social functioning, anxiety, depression

2.3 Introduction

The process of influencing which emotions arise and how they are experienced and expressed has been referred to as emotion regulation (Gross, Richards & John, 2006). Gross's (1998) process model of emotion regulation has greatly influenced theoretical thinking about this topic. The model defines five regulatory processes each targeting a different stage of the emotion generative process; 1) Situation selection, which refers to selecting situations based on the resultant emotion; 2) Situation modification, which refers to changing a situation to

influence emotional state; 3) Attentional deployment; which refers to paying attention to certain aspects of a situation; 4) Cognitive change, which refers to reappraising the situation and meaning to alter emotions 5) Response modulation, which refers to directly altering feelings, behaviour and physiology in response to the emotion.

Emotion regulation has been a widely researched topic within the adult population. Findings indicate direct relationships between specific maladaptive emotion regulation strategies, such as suppression and specific disorders such as anxiety, depression (Aldao, Nolen-Hoeksema & Schweizer, 2010; Seligowski, Lee, Bardeen & Orcutt, 2015) and post-traumatic stress disorder (Seligowski et al., 2015). Stronger relationships exist in clinical samples compared to non-clinical samples (Aldao et al., 2010).

Within the general adult population, experimental studies indicate that relationships exist between suppression and cognitive reappraisal use and well-being and social functioning (John & Gross, 2004). Cognitive reappraisal has been conceptualised as an adaptive strategy because research indicates that it is associated with reduced negative emotion and expressive behaviour without cognitive, physiological or interpersonal costs and suppression has been conceptualised as a maladaptive strategy as it associated with poorer functioning across emotional, interpersonal and well-being domains (Gross et al., 2006). In older people populations, research indicates that cognitive reappraisal is associated with improved mental health and that both cognitive ability and gender impacted on these relationships (Nowlan, Wuthrich & Rapee, 2014). The relationship between situation selection strategies and psychosocial outcomes has yet to be examined. Research also suggests that the flexible use of context dependent emotion regulation strategies is important in recovery from psychopathology (Bonanno, Papa, Lalande, Westphal & Coifman, 2004; Eftekhari, Zoellner & Vigil, 2009). The current evidence indicates the importance of trans-diagnostic therapy models, such as emotion regulation, within disorder specific treatment (Berking, Orth, Wupperman, Meier & Caspar, 2008; Berking, Wirtz, Svaldi, Hofmann, 2014; Radkovsky, Bockting, McArdle & Berking, 2014), making this an important topic for clinical practice.

There has been growing research interest in understanding how aging impacts on relationships between emotion regulation and psychosocial outcomes. Aging is assumed to be associated with losses, such as illness and bereavement. However evidence across cross-sectional and longitudinal studies shows that aging is directly associated with improved well-being, less negative emotion and more positive emotions (Charles & Carstensen, 2009).

Theoretical models have developed to explain these findings and have focused on the role of emotion regulation. The Socioeconomic Selectivity Theory (SST) (Carstensen, 1993) assumes the role of limited time realisation in later life which results in greater resources being allocated to achieving present well-being through emotion regulation. Some research findings have supported that older people focus more on time perspective than younger people (Novak & Mather, 2007). Two studies have investigated whether time perspective mediates the relationship between age and emotion regulation and findings were mixed with Yeung, Fung & Kam (2012) finding support for this and Kessler & Syaudinger (2009) not finding support. The theory also assumes that older people make greater use of situation selection strategies through having smaller, more meaningful social networks which improve their wellbeing. Again, findings have been mixed with Charles & Piazza (2007) finding support for this but Rovenpor, Skogsberg & Isaacowitz (2013) not finding support.

The Selection, Optimization and Compensation with Emotional Regulation Framework (SOC-ER) (Urry & Gross, 2010) suggests that older people achieve well-being through using carefully selecting and optimising emotion regulation strategies which then compensate for losses in resources. Lowered well-being in some older people is explained by difficulties in making compensatory shifts after available resources have decreased. This model also highlights the prominent use of situation selecting in comparison to strategies such as positive reappraisal because of loss of cognitive ability in older age. Gross et al. (2006) reviewed studies examining aging and use of emotion regulation and found evidence for positive reappraisal to increase between the ages of 20 and 60 which does not support this hypothesis. The SOC-ER model is based on logical rather than evidence based suggestions and should be used as a resource for future research hypotheses to be tested (Urry & Gross, 2010).

Charles (2010) developed the Strength and Vulnerability Integration (SAVI) model which aims to understand the relationship between aging, emotion regulation and emotional wellbeing within a developmental context by integrating factors related to both strengths and vulnerabilities of aging and highlighting the interaction of these. For example, if one has well-developed emotion regulation skills from a lifetime of practice then this factor could be a strength of aging. However, if one has also experienced a role loss or a physical health problem, then these factors could be social and biological vulnerabilities of aging and may impact on a person's ability to regulate distressing emotions. The model also integrates assumptions from other models, for example the importance of limited time perspectives.

Theoretically this model provides a better comprehensive understanding about the complex relationship between aging, emotion regulation and well-being than SST (Cartensen, 1993) and SOC-ER (Urry & Gross, 2010). However, a number of factors of the SAVI model (Charles, 2010) remain untested. For example, whether perception of time is directly related to emotion regulation and outcomes and whether there are differences between cohort effects and development process (Charles, 2010).

The current evidence base supports a direct relationship between emotion regulation and psychosocial outcomes in the adult population. Whether the aging process impacts on this is unclear. Gross (2013) highlighted the rise in empirical research which has attempted to examine the complex relationships between age, emotion regulation and psychosocial outcomes. For example mediation models have been explored by researchers such as English & John (2013) and Gerolimatos & Edelsten (2012₁). To date, no study has systematically reviewed the research on how age impacts on emotion regulation use and the relationships between age, emotion regulation and psychosocial outcomes. This study aims to rectify this by firstly examining the quality of the research and then evaluating and critiquing the evidence. The study will help to develop theoretical understanding of the topic. Given the importance of trans-diagnostic therapy models, such as emotion regulation skills within psychological therapy treatment (Berking et al., 2008; Berking et al., 2014; Radkovsky et al., 2014) these results may benefit clinical practice. This study will answer the following research questions:

1) Does age impact on the use of emotion regulation?

2) Do relationships exist between age, emotion regulation and psychosocial outcomes?

2.4 Method

Inclusion and exclusion criteria

Studies were included if they recruited participants across the working age (over 18) and older people populations (over 65) and used age as a variable in the analysis. This was defined by the normative cut-offs for psychological therapy services in the UK. Studies also requires to investigate three broad variables; age, emotion regulation and psychosocial outcomes. Given the variations in conceptualising psychosocial outcomes within the

literature, the review aimed to be inclusive. Psychosocial outcomes were defined as anxiety, depression, psychological pathology, distress, well-being, mood, quality of life or social functioning. Studies required to measure emotion regulation and psychosocial outcomes using either a validated or novel psychometric measure. Given the variations in conceptualising emotion regulation, the review aimed to be inclusive. Therefore, studies were included if they measured individual strategies or multidimensional emotion regulation. To improve synthesis of results, studies were included if they used a cross-sectional or longitudinal design but were excluded if they used an experimental or qualitative design. To ensure that included studies were of reasonably high quality, only studies published in peer reviewed journals were included. As resources were unavailable for translation, non-English language studies were excluded. In order to increase the representativeness of results, studies which focused on specific population were excluded, for example child and adolescent, the cognitively impaired, occupational and sports settings. Studies investigating neurological outcomes in emotion regulation were also excluded as the aims of the study were focused on psychosocial outcomes.

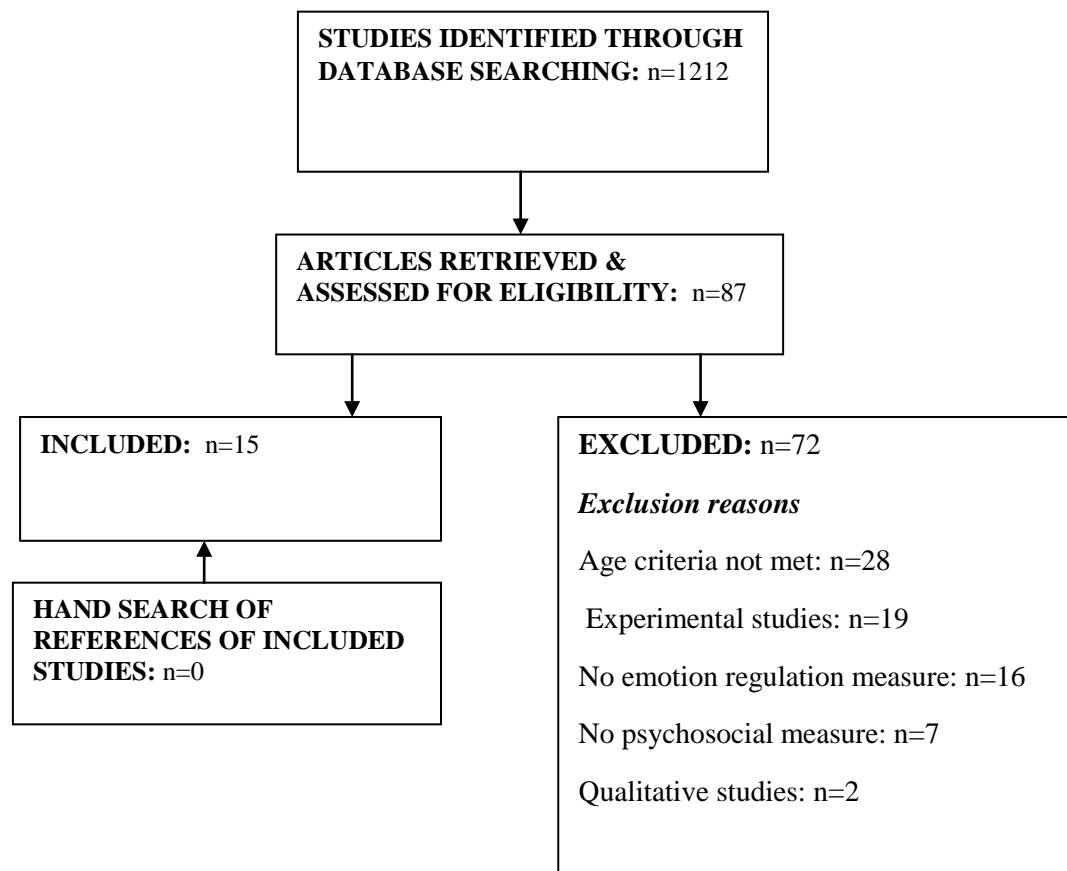
Search Strategy

A literature search was conducted in November 2014 using the following databases; Web of Science, EMBASE, PsychINFO, Medline and Cinahl. Date limits were not used but where possible, the following multiple limitations were set; English language, peer reviewed journal article, adult or older populations. Three broad search terms were used to ensure that the search resulted in papers with a focus on age, emotion regulation and psychosocial outcomes. The search terms used were 1. "AGE" AND 2. "EMOTION REGULATION" OR "AFFECT REGULATION" OR "REAPPRAISAL" OR "EMOTION SUPPRESSION" OR "RUMINATION" OR "ACCEPTANCE" OR "PROBLEM SOLVING" OR "AVOIDANCE" AND 3. "PSYCHOLOGICAL DISTRESS" OR "ANXIETY" OR "DEPRESSION" OR "EMOTION" OR "AFFECT" OR "PSYCHOSOCIAL OUTCOMES" OR "WELLBEING" OR "QUALITY OF LIFE" The specific emotion regulation strategies used in step 2 were the identified strategies examined by Aldao et al. (2010).

Search results

Figure 1 illustrates results of the search and shows that a total of 1212 results were obtained and after titles and abstracts were screened, 87 studies were retrieved and reviewed in full. Of these 72 were excluded and a total of 15 studies were included in the systematic review. Reference lists of these papers were also searched but no additional papers were found by using this method.

Figure 1: Literature Search Flow Chart



Critical appraisal of included studies

To appraise the overall methodological quality and robustness of the studies, 11 criteria were developed using guidelines from the Centre for Reviews and Dissemination (2009). These focused on the following; rationale for investigating variables, research questions, recruitment method, age categorisation of sample, reliability and validity of measures, emotion regulation strategies, confounding variables, statistical tests, power and generalisability of findings. The criteria were rated according to the Scottish Inter Collegiate Guidelines Network (SIGN, 2011) using the following outcome ratings; 2=well-covered,

1=adequately covered, 0=not addressed. Although standardised tools for critically appraising literature exist, these are predominately designed to rate randomised controlled trials and were inappropriate for the current review. The papers were appraised independently by two reviewers from a pool of four reviewers. An inter-rater analysis indicated substantial agreement between raters (Kappa=0.718 with $p<0.001$) (Landis & Koch, 1977).

2.5 Results

Summary of main characteristics

Table 1 shows the quality scores and ratings for each of the 15 studies. The mean score was 17 out of 22 (range 15 to 19) which indicated that the papers were of reasonably high quality. Higher ratings were given for criteria focused on the rationale for investigating the variables, research questions and appropriate analysis and lower and more varied ratings were given for the remaining criteria. Table 2 shows the characteristics and key findings of each study. The mean sample size was 407 (range from 80 to 1312) and cultural diversity was apparent as samples were recruited from the USA (Birditt, 2004; Cheavens, Rosenthal, Banawan & Lynch, 2008; English & John, 2013; Gerolimatos & Edelstein, 2012₁; Gerolimatos & Edelstein, 2012₂; Nolen-Hoeksema & Aldao, 2011; Shallcross, Ford, Floerke & Mauss, 2013), Canada (Martini & Busseri, 2010), Britain (Brummer & Stopa, 2013; Orgeta, 2009; Philips, Henry, Hoise & Milne, 2006), across Europe (Garnefski & Kraaij, 2006; Thomsen, Mehlen, Viidik, Sommerland & Zachariae, 2005; Trouillet, Lourel & Fort, 2009) and China (Yeung et al., 2011). Only two studies recruited clinical samples (Cheavens et al., 2008; Garnefski & Kraaij, 2006) and a mix of community and undergraduate samples were used in the other studies.

All studies used cross-sectional designs and one study also included longitudinal analyses (English & John, 2013). Statistics of association were frequently used to analyse data and variation existed between the models tested, for example regression or mediation models. Variations were apparent in the definition, categorisation and measurement of variables. For example, the lower age for a participant being defined as “old” varied from age 51 (Cheavens et al., 2008) to age 70 (Thomsen et al., 2005; Trouillet et al., 2009). Only three studies provided justification for how age was defined (Birditt, 2004; Brummer & Stopa, 2013; Trouillet et al., 2009) and these studies were rated as being high quality. Given

the cultural diversity of the study origin this is likely to have impacted on how age was categorised. The categorisation and measurement of emotion regulation also varied between studies with positive reappraisal (English & John, 2013; Garnefski & Kraaij, 2006; Gerolimatos & Edelstein, 2012₁; Gerolimatos & Edelstein, 2012₂; Yeung, Wong & Lok, 2011) and suppression (Brummers & Stopa, 2013; Cheavens et al., 2008; English & John, 2013; Gerolimatos & Edelstein, 2012₁; Gerolimatos & Edelstein, 2012₂; Nolen-Hoeksema & Aldao, 2011; Yeung et al., 2011) being the most frequently investigated strategies. Depression (Brummer & Stopa, 2013; Cheaven et al., 2008; Garnefski & Kraaij, 2006; Nolen-Hoeksema & Aldao, 2011; Orgeta, 2009; Philips et al., 2006; Thomsen et al, 2005; Trouillet et al., 2009) was the most frequent outcome investigated and social functioning (Martini & Busseri, 2010; English & John, 2013; Philips et al, 2006) was the least. Gender was the most frequent confounding and intervening variable examined (Birditt, 2004; Brummer & Stopa, 2013; Cheavens et al., 2008; Garnefski & Kraaij, (2006); Nolen-Hoesema & Aldao, 2011; Orgeta, 2009; Thomsen et al., 2005; Yeung et al., 2011).

Summary of results relating to research questions

Does age influence the use of emotion regulation strategies?

Results indicated that the majority of studies investigating age and cognitive reappraisal found that older people made greater use of this strategy (English & John, 2013; Garnefski & Kraaij, 2006; Gerolimatos & Edelstein, 2012₁; Gerolimatos & Edelstein, 2012₂; Yeung, Wong & Lok, 2011). However, these papers received mixed ratings for the criterion related to the measurement of emotion regulation and age definition. For use of the other strategies, more divergent findings were evident. For example for use of suppression, two studies rated higher than average for methodological quality found that older people used suppression more than younger people (Brummer & Stopa, 2013; Nolen-Hoeksema & Aldao, 2011), two studies rated as average for methodological quality found that younger people used it more (Cheavens et al., 2008; English & John (2013) and three studies rated as lower than average for methodological quality found no age differences (Gerolimatos & Edelstein, 2012₁; Gerolimatos & Edelstein, 2012₂; Yeung et al., 2011). One study rated as average for methodological quality examined the concept of emotion dysregulation and found lower scores in older people (Orgeta, 2009). Two studies rated as average for methodological quality examined maladaptive versus adaptive strategies and age was not found to have an influence (Birditt, 2004; Martini & Busseri, 2010).

Do relationships exist between age, emotion regulation and psychosocial outcomes?

All studies investigated the relationship between age, emotion regulation and psychological distress or wellbeing. There was a divergent patterns of findings making it difficult to draw even tentative conclusions. For example, six studies with mixed methodological quality examined the relationships between cognitive reappraisal, age and psychosocial outcomes and findings indicated cognitive reappraisal not to be related to social functioning across ages in a study rated as having average methodological quality (English & John, 2013), to be associated with lower depressive symptoms across ages in a study rated as having higher than average methodological quality (Garnefski & Kraaij, 2006), not to be associated with depressive symptoms across ages in a study rated as having higher than average methodological quality (Nolen-Hoeksema & Aldao, 2011), to partially mediate the relationship between age and positive affect in a study rated as having the lowest score of methodological quality (Yeung et al., 2011) and to contribute towards health anxiety across age groups in a study rated as having the lowest score of methodological quality (Gerolimatoes & Edelstein, 2012₂) but not to mediate the relationship between age and health anxiety in a study rated as having the lowest score of methodological quality (Gerolimatoes & Edelstein, 2012₁).

Four studies investigated the relationship between suppression, age and psychosocial outcomes and again, these varied in their methodological quality ratings. It was found to be related to increased depression and anxiety in younger people in a study rated as having the highest score of methodological quality (Brummer & Stopa, 2013) to be associated to increased depression across ages in a study rated as having higher than average score of methodological quality (Nolen-Hoeksema & Aldao, 2011) to be associated with lower relationship satisfaction in younger people in a study rated as having an average score of methodological quality (English & Johns, 2013) and to mediate the relationship between age and health anxiety in a study rated as having the lowest score of methodological quality (Gerolimatoes & Edelstein, 2012₁). For findings related to the other individual and multidimensional measures of emotion regulation, a similar pattern was evident.

Table 1: Quality scores and ratings

Study	Quality score (out of 22)	Rationale For variables	Research Questions	Method of Recruitment	Age Categories	ER measure	Range of ER strategies	Psychosocial measure	Confounding variables	Statistical tests	Statistical power	Generalisability
Birditt (2004)	17	WC	WC	WC	WC	AA	AA	AA	WC	WC	AA	AA
Brummer & Stops (2013)	19	WC	WC	AA	WC	WC	AA	WC	WC	WC	WC	AA
Cheavens et al (2008)	16	WC	WC	WC	AA	AA	AA	WC	AA	WC	AA	AA
English & John (2013)	17	WC	WC	AA	WC	WC	AA	WC	AA	WC	AA	AA
Garnefski & Kraaij (2006)	18	AA	WC	AA	AA	WC	WC	WC	WC	WC	AA	WC
Gerolimatos & Edelstein 1 (2012)	15	WC	AA	AA	AA	AA	AA	WC	AA	WC	AA	AA
Gerolimatos & Edelstein 2 (2012)	15	WC	AA	WC	AA	AA	AA	AA	AA	WC	WC	AA
Martini & Busseri (2010)	16	WC	AA	AA	WC	WC	AA	AA	WC	WC	AA	AA
Nolen-Hoeksema & Aldao (2011)	18	WC	WC	WC	WC	AA	WC	AA	AA	WC	AA	WC
Orgeta (2009)	17	WC	WC	WC	AA	WC	WC	AA	AA	WC	AA	AA
Philips et al (2006)	19	WC	WC	WC	WC	WC	AA	WC	WC	WC	AA	AA
Shallcross et al (2013)	15	WC	AA	AA	AA	WC	AA	AA	WC	WC	AA	AA
Thomsen et al (2005)	15	WC	WC	AA	AA	AA	AA	AA	WC	WC	AA	AA
Trouillet et al (2009)	19	WC	WC	WC	WC	AA	WC	WC	WC	WC	AA	AA
Yeung et al (2011)	15	WC	WC	AA	AA	AA	AA	AA	WC	WC	AA	AA

Legend

WC-Well covered

AA-Adequately covered

NC-Not covered

Table 2: Study characteristics & key findings

Study & Origin	Design	Sample	Sample Size	Age groups	Emotion Regulation Measure & Strategies	Psychosocial Measures used	Analysis	Key findings
Birditt (2004) <i>USA</i>	Cross sectional	Community	110	3 age groups: 1. 37 Middle-aged (40-59) 2. 37 Young-old (60-79) 3. 36 Old-old (80-95)	Adapted version of Daily Inventory of Stressful Events (Almeida et al, 2002) <i>Minimised strategy Expressed Strategy</i>	25 items from already adapted Wellbeing measures through using items from NSDE 2 (Cichy et al)	Regression	1. Age did not impact on use of emotion regulation. 2. Older people's well-being is less negatively affected by using a minimisation strategy.
Brummer & Stops (2013) <i>UK</i>	Cross sectional	Community	577	3 age groups: 1. 317 Young (18-29) 2. 175 Middle-aged (30-64) 3. 85 Older (65-91)	Emotion Regulation Questionnaire (Gross & John, 03) <i>Cognitive reappraisal Suppression</i>	Depression Anxiety Stress Scale (Lovibond & Lovibond, 95)	Manova	1. Older people use suppression more. 2. Age did not impact on use of cognitive appraisal. 3. Suppression is associated with psychological distress in younger people but not older people.
Cheavens et al (2008) <i>USA</i>	Cross sectional	Community & Clinical	166	4 groups: 1. 46 Younger (under 45, 18-44) Non psychiatric 2. 43 Older (over 50, 51-80) Non psychiatric (over 50) 3. 41 Younger psychiatric (19-44) 4. 36 Older psychiatric (54-75)	Ambivalence over Emotional Expression Questionnaire (King & Zanakos, 94) <i>Rumination</i>	Hamilton Depression Rating Scale (Miller et al 85)	Ancova	1. Younger people used suppression more. 2. Age did not impact on rumination use.

English & John (2013)	Longitudinal & Cross-Cultural	Community & Undergraduates	377	3 groups: 1. 157 USA Young (mean age 20) 2. 114 – Chinese Young (mean age 19) 3. 106 – USA Older (Around 60 then follow up around 70)	Emotion Regulation Questionnaire (Gross & John, 2003) 2 scales <i>Suppression</i> <i>Reappraisal</i>	4 questions used from Relationship satisfaction (Gill & Swann, 04) - For young group Interpersonal Support Evaluation List (Cohen & Hoberman, 83) - For older group	Mediation	1. Older people used more cognitive reappraisal and less suppression than younger group. 2. For younger group, use of suppression was associated with lower relationship satisfaction and positive emotion expression mediated this relationship. 3. Habitual use of suppression at age 60, was linked to lower social support at age 70 and inauthenticity mediated this relationship.
Garnefski & Kraaij (2006)	Community & Clinical	Cross sectional	1001	3 groups: 1. 611 Adult group (18-65) 2. 89 Older group (66-97) 3. 301 Clinical group (18-65)	Cognitive Emotion Regulation Questionnaire (Garnefski et al, 02) <i>Rumination, Catastrophizing, Self-blame, Other-blame, Acceptance, Positive Reappraisal, Putting into perspective, Positive reinforcing, Planning</i>	Depression subscale of Symptom Checklist (Derogatis, 77) For younger groups Geriatric Depression Scale (Brink et al, 1982) for Older group	Regression	1. Age did not impact on use of maladaptive coping. 2. Older people used more adaptive coping strategies. 3. Cognitive reappraisal, rumination and catastrophizing were associated to depressive symptoms across ages. 4. Self-blame were associated with depressive symptoms in younger but not older sample. 5. Acceptance had positive relationship with depressive symptoms in both samples. 6. Putting into perspective was significantly correlated to depressive symptoms in elderly sample only. 7. Other-blame was not associated with depressive symptoms in any group.
Gerolimos & Edelstein (2012)	Community & Undergraduates	Cross sectional	205	2 groups: 1. 119 Young (18-30) 2. 86 Older people (60-90)	Emotion Regulation Questionnaire (Gross & John, 2003)	Short Health Anxiety Inventory (Salkovskis et al 02)	Mediation	1. Older people reported higher levels of reappraisal. 2. There were no differences in use of suppression. 3. Reappraisal & suppression did not mediate the

<i>USA</i>					<i>Suppression</i> <i>Cognitive Reappraisal</i>			relationship between age and health anxiety.
Gerolimos & Edelstein (2012)	Community & Undergraduates	<i>Cross sectional</i>	205	2 groups: 1. 119 Young (18-30) 2. 86 Older (60-90)	Emotion Regulation Questionnaire (Gross & John, 2003)	Short Health Anxiety Inventory (Salkovskis et al 02)	Regression	1. Cognitive reappraisal contributed towards health anxiety for both groups.
<i>USA</i>					<i>Suppression</i> <i>Cognitive Reappraisal</i>			
Martini & Busseri (2010)	Community	Cross sectional	154	77 mother-daughter dyads: Mother's (mean age – 75.5), had to be over 65, Daughter's (mean age – 47.1)	Novel questionnaire <i>Passive strategies</i> <i>Proactive strategies</i>	Novel questionnaires developed for study to measure affect & relationships	Path Analysis	1. Older & younger people's use of passive ER strategies (suppression, avoidance and distraction) were associated with lower positive affect and increased negative affect. 2. Older and younger people's use of proactive strategies (e.g. expressing oneself) were associated with lower negative affect. 3. Older & younger people's use of passive ER strategies were associated with lower helping relationships satisfaction.
<i>Canada</i>								
Nolen-Hoeksema & Aldao (2011)	Community	Cross sectional	1312	3 groups: 1. Young (25-35) 491 2. Middle aged (45-55), 524, 3. Older (65-75), 297	Ruminative Response Scale (Nolen-Hoeksema & Morrow, 91) Cope Inventory – short version (Carver, 97) <i>Rumination, Suppression, Reappraisal, Problem solving, Acceptance, Social</i>	Beck Depression Inventory-Short form (Beck & Beck 72)	MANCOVA	1. Rumination: Older people used less than younger groups. 2. Suppression: Older females had higher scores but not men. 3. Reappraisal: Younger groups used more. 4. Active coping: Older women used less. 5. Acceptance: Declines with age for both men and women. 6. Emotional support: Declines with age for both men and women.
<i>USA</i>								

					<i>Support</i>			7. Rumination & suppression was associated with depressive symptoms in all age groups and genders. Reappraisal, active coping, acceptance and social support were not.
Orgeta (2009)	Community & Undergraduates	Cross sectional	80	2 groups: 1. Young (17-37), 40 2. Old (61-81), 40	Difficulties in Emotion Regulation (Gratz & Roemer, 04)	Positive and Negative affect scale (Watson et al, 88).	Mediation	1. Age did not impact on use of acceptance. 2. Older people used less impulsive and engaged in more goal directed behaviour. 3. Younger adults scored higher on emotion dysregulation as a whole. 4. For older group goals was associated to depression.
<i>UK</i>					<i>Non-acceptance, Goals, Impulse, Awareness, Strategies, Clarity</i>	Hospital Anxiety & Depression Scale (Zigmond & Snaith, 1983)		
Philips et al (2006)	Community & Undergraduates	Cross sectional	286	Age 18-88	Stait-Trait Anger Expression (Steinberger, 88)	HADS (Zigmond & Snaith, 83)	Regression	1. Increasing age is associated with more anger control in, out and less expression in and out. 2. Anger regulation moderates the relationship between age and anxiety but not depression. 3. Anger regulation moderates the relationship between age and negative affect. 4. Anger regulation moderates the relationship between age and social functioning.
<i>UK</i>					Anger Rumination Scale (Sukhodolsky et al, 2001)	Positive and Negative affect scale (Watson et al, 88).		
					<i>Outward Expression. Inward expression, Control out, control in, Rumination</i>	LEIPAD-QOL (Leo et al 98)		
Shallcross et al (2013)	Community	Cross sectional	340	Age 21-73	Kentucky Inventory of Mindfulness Skills (Baer et a, 2004)	Self-reported measure of trait affect and daily negative affect.	Mediation	1. Older age was associated with use of acceptance. 2. Acceptance mediated the relationship between age and lowered negative affect (anger and anxiety but not sadness).
<i>USA</i>					<i>Acceptance</i>			
Thomsen et al (2005)	Community	Cross sectional	497	2 groups: 1. 195 Young (20-35), 2. 302 Older (70-85)	Subscale Emotion Control Questionnaire (Roger & Najarian, 1989)	Profile of Mood States (McNair et al, 1981)	Regression	1. Age did not impact on rumination. 2. Rumination partially mediated the relationship between young women's anxiety and depression.

<i>Denmark</i>					<i>Rumination</i>	Beck's Depression Inventory (Beck et al, 1996)		
Trouillet et al (2009)	Community & Undergraduates	Cross sectional	153	2 groups: 1. Young (20-40) 2. Middle (41-69) 3. Old (70-88)	Ways of Coping Checklist (Vitaliano et al, 85)	Social Support Scale (Sarason et al, 87)	Path analysis	1. Age did not predict use of emotion focused or problem focused strategies.
<i>France</i>					<i>Emotion focused</i> <i>Problem focused</i>	Geriatric Depression Scale (Yesavage et al, 83)		
Yeung et al (2011)	Community & Undergraduates	Cross sectional	645	Age 18-64	Emotion regulation questionnaire (Gross & John, 03)	10 items from Positive and Negative affect scale (Watson et al, 88).	Mediation	1. Older age was associated with cognitive reappraisal. 2. No age differences were apparent in use of suppression. 3. Cognitive reappraisal partially mediates the relationship between age and positive affect.
<i>Hong Kong</i>					<i>Cognitive Reappraisal</i> <i>Rumination</i>			

2. 6 Discussion

This study aimed to investigate how age impacts on emotion regulation use and how age impacted on the relationship between emotion regulation and psychosocial outcomes. The results indicated that the current evidence base consists of studies which are of reasonable high methodological quality. It is also characterised by a divergent pattern of findings which are based on a fairly heterogeneous sample of studies. Difficulties in synthesising findings resulted from this and results should be interpreted with caution. Various methodological differences within the studies are likely to have impacted on this. These will be discussed and suggestions for rectifying these issues in future research will be proposed.

Results suggest that positive reappraisal is used more by older people than younger people (English & John, 2013; Garnefski & Kraaij, 2006; Gerolimatos & Edelstein, 2012₁; Gerolimatos & Edelstein, 2012₂; Yeung, Wong & Lok, 2011). This supports findings by Nowlan et al. (2014) who proposed that positive reappraisal was a beneficial strategy in later life in comparison to behaviour change strategies because of the likelihood of unchangeable events, such as bereavement. These results also support Gross et al. (2006) who reviewed the literature and found that positive reappraisal increased between the ages of 20 and 60. Aspects of the SST (Cartensen, 1993), SOC-ER (Urry & Gross, 2010) and SAVI (Charles, 2010) models are supported by these findings as they propose that older people allocate greater resources to emotion regulation and have strengths in these skills. However without empirical evidence it cannot be assumed that greater use of positive reappraisal is associated with successful use in achieving positive psychosocial outcomes. The SAVI model (Charles, 2010) also assumes that older people use more selecting situations and attentional deployment strategies because cognitive decline may impact on ability to use cognitive reappraise. The results of this study do not support this aspect of the SAVI model. It should be noted that samples consisted of younger, healthier older people who may not yet have experienced the vulnerabilities of aging proposed by the SAVI model. It should also be observed that positive reappraisal was the most frequently researched by the studies reviewed which may be a factor in the results gathered.

The influence of age on the use of suppression was inconclusive. Brummer & Stopa (2013) proposed that suppression use would be higher in older people because of cohort beliefs about disclosing distress and also because suppression may be beneficial in dealing

with unchangeable events in later life. Although these hypotheses makes clinical and theoretical sense, results of this study do not support them.

Gross (2013) suggests that the increased research on age, emotion regulation and psychosocial outcomes using intervening variable models highlights the complexity of the relationships between variables. Despite the current evidence base being unable to provide clarity about the nature of these relationships, the results support that relationships are complex, rather than causal. Cheavens et al. (2008) highlighted the importance of mediating and moderating variables. The results identified gender (Cheavens et al., 2008; Garnefski & Kraaij, 2006; Nolen- Hoeksema & Aldao, 2011; Thomsen et al., 2005), clinical populations (Cheavens et al., 2008; Garnefski & Kraaij, 2006) and cognitive ability (Orgeta, 2011; Thomsen et al., 2005) to be variables which impact on the relationship between age, emotion regulation and psychosocial outcomes. Nowlan et al. (2004) found that relationships between positive reappraisal and outcomes in older people was influenced by both gender and cognitive ability. Using the SAVI model (Charles, 2010) it could be hypothesised that cognitive ability is a vulnerability factor for older people which may impact on emotion regulation use. Whether this impacts on use of specific strategies or the ability to use a particular strategy is unclear.

Methodological issues and & future research

There were discrepancies in the definition of “old,” “middle-aged” and “young” between the studies and the cultural diversity of the study origins are likely to have impacted on this. Despite this, the need for future research investigating age as a main variable, rather than as a control variable is evidenced from the results of this review. Currently the role of age in the relationship between emotion regulation and psychosocial outcomes remains unclear. The majority of studies using associational methods investigated age as a predictor variable (e.g. studies by Shallcross et al., 2013; Yeung et al., 2011) but others investigated age as a moderating variable (e.g. Trouillet et al, 2009).

The variability of emotional regulation conceptualisation and definition is an important methodological issue. The cultural diversity of the studies origins are also likely to impacted on how this construct was conceptualised and defined. Orgeta (2009) highlighted that the range of measurement tools has resulted in a lack of comprehensive, integrative conceptualisation of the construct. The review findings support this as studies varied between using individual strategies or multidimensional constructs. Research to date has

predominately focused on positive reappraisal and suppression, leading to less evidence being available for other strategies. Therefore, it is important to acknowledge that a lack of research does not necessarily mean a lack of relevance or relationship. The results indicate that investigating individual strategies, rather than categorisation of strategies may offer greater understanding of the relationships. For example, the scales used by Birditt (2004) & Trouillet et al. (2009), conceptualised suppression and cognitive reappraisal as the same construct. From some theoretical stances, e.g. the SAVI model (Charles, 2010), this makes sense as all emotion regulation strategies are assumed to have the same function, i.e. to minimise negative emotion. However empirical evidence suggests the importance of examining the distinct relationships between individual strategies, age and outcomes.

Gaps between theoretical models of aging and empirical evidence exist. The SST (Cartensen, 1993), SOC-ER (Urry & Gross, 2010) & SAVI (Charles 2010) models assume that improved well-being in older people is directly related to superiority in emotion regulation skills. They assume a focus on situation selection through selecting smaller and closer social networks. However, experimental studies have yielded mixed findings on this (Charles & Piazza, 2007; Rovenpor et al., 2013) and further investigation of this and whether relationships exist between situation selection, age and psychosocial outcomes is required. The definition and conceptualisation of situation selection requires attention before empirical research can be conducted. The SAVI model (Charles, 2010) also assume that emotion regulation improves with age due to increased experience of implementing strategies. Although not a focus of the current review, Garnefski & Kraaij (2006) compared five different age groups in their study, including adolescent samples. They found that use of all strategies increased between adolescent and adulthood and reported that this indicated improvements in implementing strategies due to life experience. This supports the importance of research focusing on the developmental processes involved in emotion regulation rather than focusing on group differences between older and younger people which may be impacted by cohort effects.

Whether cross-sectional designs and self-report measures of emotion regulation generalise to real-world settings across different cultures is unclear. Nolen-Hoeksema & Aldao (2011) suggest that the emotion regulation used by individuals may be context dependent and employed based on the appropriateness of the situation, e.g. positive reappraisal may not be an adaptive strategy within an abusive relationship. Trouillet et al. (2010) also highlighted the importance of being able to shift between emotion-focused and

problem-focused coping dependent on the circumstances. Charles (2010) indicated that the SAVI model does not provide an understanding about why particular emotion regulation goals are chosen and how these goals may be context dependent. Within clinical populations, research has indicated the importance of the flexible use of context dependent emotion regulation strategies for psychopathology recovery (Bonanno et al., 2004; Eftekhari & Vigil, 2009).

Implications for clinical practice

As links between emotion regulation and pathology have been evidenced (Aldao et al., 2010; Seligowski et al., 2015), improving understanding of how age might impact on these relationships will help link theory to practice. However, only two of the papers examined clinical groups (Cheavens et al., 2008; Garnefski & Kraaij, 2006), one of which (Cheavens et al., 2008) included older people clinical participants. Firm conclusions cannot be made to inform clinical practice but further research should investigate the relationship between particular strategies, such as rumination and pathological outcomes across age groups and whether this is influenced by psychiatric diagnosis, such as major depression or personality disorder, as found by Cheavens et al. (2008). The SST (Cartensen, 1993), SOC-ER (Urry & Gross, 2010) & SAVI (Charles, 2010) models assume that well-being improves with age. Charles (2010) proposes that older people have strengths in emotion regulation skills through practice. However for clinical populations of older people, it could be hypothesised that maladaptive coping strategies may be well-practised and could be a vulnerability factor in the relationship between aging and well-being.

Limitations of review

The broad inclusion criteria and search strategy of this study, e.g. the inclusion of outcomes related to psychological pathology, well-being and social functioning, is likely to have contributed to difficulties in drawing conclusions from this work due to the heterogeneous nature of studies. However, as this topic had not been examined before, the broadness of the research question was justified. As only published work was included, file-drawer effects may have occurred as relevant “grey literature” was excluded.

Conclusions

The results of this study provided support for older people making greater use of positive reappraisal than younger people. The current evidence base comprises reasonably high quality papers but does not enable conclusions to be derived about the impact of age on the relationship between emotion regulation use and psychosocial outcomes. The variation across methodological issues, such as the definition and measurement of variables was a likely factor in this. The culturally diverse nature of the reviewed studies were likely to have impacted on the variation in the definition and measurement of variables. However, findings from this study support the complexity of the relationship between age, emotion regulation and psychosocial outcomes and highlight the importance that other variables, such as cognitive ability and gender, may have on these relationships. From results of this study, future research can be developed to address some of issues arising from the current evidence base. Particular focus should be given to clinical samples, in order for treatment recommendations to be developed as this is a particular area which has been neglected. Longitudinal research would also help to develop understanding of the developmental nature of emotion regulation, aging and psychosocial outcomes rather than examining a causal relationship between factors.

2.7 References

- Aldao, A., Nolen-Hoeksema, S. & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, 30, 217-237.
- Berking, M., Orth, U., Wupperman, P., Meier, L.L. & Caspar, F. (2008). Prospective effects of emotion-regulation skills on emotional adjustment. *Journal of Counselling Psychology*, 55, 4, 485-494.
- Berking, M., Wirtz, C.M., Svaldi, J. & Hofmann, S.G. (2014). Emotion regulation predicts symptoms of depression over five years. *Behaviour Research and Therapy*, 57, 13-20.
- Birditt, K.S. (2014). Age differences in emotional reaction to daily negative social encounters. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 69, 4, 557-566.
- Bonanno, G.A., Papa, A., Lalande, K., Westphal, M. & Coifman, K. (2004). The importance of being flexible: The ability to both enhance and suppress emotional expression predicts long-term adjustment. *Psychological Science*, 15, 7, 482-487.
- Brummer, L. & Stopa, L. (2013). The influence of age on emotion regulation strategies and psychological distress. *Behavioural and Cognitive Psychotherapy*, 42, 6, 668-81.
- Cartensen, L.L. (1993). Motivation for social contact across the life span: A theory of socioemotional selectivity. In J.E. Jacobs (Eds), *Nebraska symposium on motivation* (pp 209-254). Lincoln: University of Nebraska Press.
- Charles, S.T. & Cartensen, L.L. (2009). Social and Emotional Aging. *The Annual Review of Psychology*, 61, 383-409.
- Charles, S.T. (2010). Strength and Vulnerability Integration: A model of emotional well-being across adulthood. *Psychological Bulletin*, 136, 1068-1090.
- Charles, S.T. & Piazza, J.R. (2007). Memories of social interactions: Age differences in emotional intensity. *Psychology & Aging*, 22, 300-309.

- Cheavens, J.S., Rosenthal, M.Z., Banawan, S.F. & Lynch, T.R. (2008). Differences in emotional experiences and emotion regulation as a function of age and psychiatric condition. *Aging & Mental Health*, 12, 2, 478-487.
- Centre for Reviews and Dissemination (2009). *Systematic Reviews: CRD's guidance for undertaking reviews in health care*, CRD: University of York
- Eftekhari, A., Zoellner, L.A. & Vigil, S.A. (2009). Patterns of emotion regulation and psychopathology. *Anxiety, Stress & Coping*, 22, 5, 571-586.
- English, T. & John, O.P. (2013). Understanding the social effects of emotion regulation: The mediating role of authenticity for individual differences in suppression. *Emotion*, 13, 2, 314, 329.
- Garnefski, N. & Kraaij, V. (2006). Relationships between cognitive emotion regulation strategies and depressive symptoms. *Personality and Individual Differences*, 40, 1659-1669.
- Gerolimatos, L.A. & Edelstein, B.A. (2012₁). Anxiety-related constructs mediate the relation between age and health anxiety. *Aging & Mental Health*, 16, 8, 975-982.
- Gerolimatos, L.A. & Edelstein, B.A. (2012₂). Predictors of health anxiety among older and young adults. *International Psychogeriatrics*, 24, 12, 1998-2008.
- Gross, J.J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, 2, 271-299.
- Gross, J.J. (2013). Emotion regulation: Taking stock and moving forward. *Emotion*, 13, 3, 359-365.
- Gross, J.J., Richards, J.M. & John, O.P. (2006). Emotion regulation in everyday life. In Lewis, M., Haviland-Jones, J.M.; Barrett, L.F. (pp. 497-512). *Handbook of Emotions* (3rd ed.). New York: The Guildford Press.
- John, O.P. & Gross, J.J. (2004). Healthy and unhealthy emotion regulation: Personality process, individual differences and lifespan development. *Journal of Personality*, 72, 1301-1333.

- Kessler, E. & Staudinger, U.M. (2009). Affective experiences in adulthood and old age: The role of affective arousal and perceived affect regulation. *Psychology and Aging*, 24, 2, 349-362.
- Landis, J.R. & Koch, G.G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33, 1, 159-174.
- Martini, T.S. & Busseri, M. (2010). Emotion regulation strategies and goals as predictors of older mothers' and adult daughters' helping-related subjective well-being. *Psychology and Aging*, 25, 1, 48-59.
- Nolen-Hoeksema, S. & Aldao, A. (2011). Gender and age differences in emotion regulation strategies and their relationship to depressive symptoms. *Personality and Individual Differences*, 51, 704-708.
- Novak, D.L. & Mather, M. (2007). Aging and Variety Seeking. *Psychology and Aging*, 22, 4, 728-737.
- Nowlan, J.S., Wuthrich, V.M. & Rapee, R. (2014). Positive reappraisal in older people: A systematic review. *Aging & Mental Health*, 19, 6, 475-484.
- Orgeta, V. (2009). Specificity of age differences in emotion regulation. *Aging & Mental Health*, 13, 6, 818-826.
- Philips, L.H., Henry, J.D., Hoise, J.A. & Milne, A.B. (2006). Age, anger regulation and well-being. *Aging & Mental Health*, 10, 3, 250-256.
- Radkovky, A., Bockting, C.L.H., McArdle, J.J. & Berking, M. (2014). Successful emotion regulation skills application predicts subsequent reduction of symptoms severity during treatment of major depressive disorder. *Journal of Counselling and Clinical Psychology*, 82, 2, 248-262.
- Rovenpor, D.R., Skogsberg, N.J. & Isaacowitz, D.M. (2013). The choices we make: an examination of situation selection in younger and older adults. *Psychology and Aging*, 28, 2, 365-376.
- Scottish Intercollegiate Guidelines Network (SIGN). (2013). *SIGN 50. A guideline developer's handbook* (revised edition). Edinburgh: SIGN.

- Seligowski, A.V., Lee, D.J., Bardeen, J.R. & Orcutt, H.K. (2015). Emotion regulation and Posttraumatic stress symptoms: a meta-analysis. *Cognitive Behaviour Therapy*, 44, 2, 87-102.
- Shallcross, A.J., Ford, B.Q., Floerke, V.A. & Mauss, I.B. (2013). Getting better with age: The relationship between age, acceptance and negative affect. *Journal of Personality and Social Psychology*, 104, 4, 734-749.
- Thomsen, D.K., Mehlen, M.Y., Viidik, A., Sommerland, B. & Zachariae. (2005). Age and gender differences in negative affect-is there a role for emotion regulation? *Personality and Individual Differences*, 38, 1935-1946.
- Trouillet, R., Gana, K., Lourel, M. & Fort, I. (2009). Predictive value of age for coping: The role of self-efficacy, social support satisfaction and perceived stress. *Aging & Mental Health*, 13, 3, 357-366.
- Urry, H.L. & Gross, J.J. (2010). Emotion regulation in older age. *Current Directions in Psychological Science*, 19, 6, 352-357.
- Yeung, D, Y., Fung, H.H. & Kam, C. (2012). Age differences in problem solving strategies: The mediating role of future time perspectives. *Personality and Individual Differences*, 53, 38-43.
- Yeung, D.Y., Wong, K.M. & Lok, D. P.P. (2011). Emotion regulation mediates age differences in emotions. *Aging & Mental Health*, 15, 3, 4141-418.

3.1 Chapter 2: Empirical Study

Trauma Exposure and Psychosocial Outcomes in Older People: Does Emotion Regulation and Resilience Have a Role?

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3. 2 Abstract

Objectives: This study aimed to investigate the nature of trauma exposure in a clinical group of older people and then to investigate a novel model examining the role of emotion dysregulation and resilience in the relationship between trauma exposure and psychosocial outcomes.

Method: Forty seven participants recruited from psychological therapy services completed six self-report measures of trauma exposure, resilience, emotion dysregulation, PTSD symptoms, quality of life, anxiety and depression. A bootstrapped corrected procedure was used to test the indirect effects of resilience and emotion regulation.

Results: Trauma exposure was reported by all participants and was associated with emotion dysregulation and PTSD symptoms. Further analysis indicated that emotion dysregulation partially mediated this relationship. Trauma exposure was not directly associated with anxiety, depression and quality of life but was indirectly related through emotion dysregulation. Resilience was not found to be associated with trauma exposure.

Conclusions: Results improved understanding about the nature of trauma exposure in a clinical group of older people. It also supports the importance of emotion dysregulation as an intervening variable in the relationships between trauma exposure and psychosocial outcomes. Implications for clinical practice and theoretical models are discussed and areas for future research are identified.

Keywords: Older people, trauma exposure, PTSD, emotion dysregulation, resilience, psychosocial outcomes

3. 3. Introduction

The population in Scotland aged over 75 is predicted to increase 75% by 2031 (Scottish Executive, 2007). An increased demand for psychological therapies to treat conditions, such as Post-traumatic stress disorder (PTSD) is likely. Symptoms associated with PTSD are re-experiencing, avoidance and hyper-arousal, which arise following exposure to an event involving actual or threatened death, serious injury or threat to one's physical integrity (American Psychiatric Association, 2013). Empirical research on trauma and PTSD has predominately focused on adult populations. The evidence base for psychological therapies to treat PTSD, such as Prolonged Exposure (Foa, 2000) within the adult population is robust

(Bisson & Andrew, 2007; Bisson, Roberts & Lewis, 2013; Keane, Marshall & Casey, 2006). A paucity of research exists within older people populations and is focused on specific populations, such as war veterans (Averill & Beck, 2000; Bottche, Kuwert & Knaevelsrud, 2011; Busuttil, 2004; Cook & O'Donnell, 2005). The extent to which this can be generalised to a current group of older people is limited and the prevalence of PTSD in the elderly is unclear (Busuttil, 2004). For older people with PTSD, the current evidence base suggests that psychological therapy treatment leads to symptom reduction but not full remission and additional treatments components, such as greater frequency of sessions have been proposed (Dinnen, Simiola & Cook, 2015).

Older people should be investigated as a distinct group within trauma research and a developmental understanding of the trauma in relation to the aging process should be considered (Lapp, Agbokou & Ferreri, 2011). Although both younger (Kessler, Sonnega, Bromet, Hughes & Nelson, 1995; Kessler, Burglund, Demler, Jin, Merikangas & Walters, 2006; Stein, Walker, Hazen & Forde, 1997) and older people (de Vries & Olf, 2009) report high levels of trauma exposure with males experiencing greater trauma exposure than females, but females experiencing greater levels of PTSD, a review comparing findings in both populations indicated that younger adults had higher rates of PTSD following recent traumatic events (Norris, 2002). Within older people populations cognitive, sensory and physical health problems may impact on assessment and treatment of PTSD (Thorp, Sones & Cook, 2011). Older people may be more reluctant to acknowledge trauma symptomology due to cohort beliefs and feelings of shame (Cook & Niederehe, 2007) or attribute symptoms to either physical conditions or the aging process (Owens, Baker, Kasckow, Ciesla & Mohamed, 2005). The reasons why older people with a history of trauma experience PTSD in later life is unclear. Busuttil (2004) found that PTSD can emerge following a recent trauma or a trauma earlier in life which results in episodic, chronic or delayed symptoms. Bottche et al (2001) found that symptoms in later life may depend of the developmental onset of the trauma, with those traumatised earlier in life experiencing greater symptoms. Port, Engdahl & Frazier (2001) suggested associations between increased PTSD symptoms in later life and life stressors.

Within the adult population, direct relationships between trauma exposure and psychopathology have been found (Norman, Byambaa, Butchart & Scott, 2012; Perrin, Vandeleur, Castelao, Rothen, Glaus, Vollenweider & Preisig, 2014). The long term effects of trauma exposure in older people may present as anxiety or depressive disorders and lead to

misdiagnosis (Averill & Beck, 2000). As anxiety and depressive disorders are highly prevalent problems within older people clinical populations (Laidlaw, Thompson, Gallagher-Thompson & Dick-Siskin, 2003), the investigation of a specific clinical sample of older people presenting with these disorders may help to further understand the manifestation of the long term effect of trauma exposure. Within traumatised older people populations comorbidity with other problems, such as anxiety and depression (Herrmann & Eryavec, 1994; Livingston, Livingston & Fell, 1994; Summers, Hyer, Boudewyns, 1996) and lower quality of life (Schnurr, 2009) have been found. Trauma exposure has also been directly associated with lower quality of life in older people (Ardalan, 2010). Whether direct relationships between trauma exposure and psychosocial outcomes exist within older people populations is unclear but warrants investigation.

Investigating direct relationships alone fails to consider the complexity of relationships between variables and possible intervening variables (Davydov, Stewart, Ritchie & Chaudieu, 2010). Within the adult population, the role of emotion regulation has been indicated to be important. Meta-analytical studies have evidenced the association between avoidant emotion regulation strategies and PTSD (Seligowski, Lee, Berdeen & Orcutt, 2015) and various other psychopathological disorders, such as depression and anxiety (Aldao, Nolen-Hoeksema & Schweitzer, 2010). Research also indicated emotion regulation to mediate the relationship between trauma exposure and psychosocial outcomes (Burns, Jackson & Harding, 2010; Ehring & Quack, 2010; Lilly, Jordan & Bridgett, 2014; Stevens, Gerhart, Goldsmith, Heath, Chesney & Hobfoll, 2013). Seligowski et al., (2015) found emotion dysregulation, rather than individual strategies to be stronger in predicting outcomes across both cross-sectional and longitudinal studies (Seligowski et al., 2015). The relationship between trauma exposure and psychosocial outcomes in older people has been proposed to be complex and involving both negative and positive intervening variables (Averill & Beck, 2000). Within traumatised older people populations, difficulties in emotion regulation have been proposed. Emotional avoidance strategies may be well-developed due to cohort beliefs about discussing distress (Hilton, 1997) and specific life events during adulthood, such as employment and child rearing may function as avoidance strategies in earlier life (McLeod, 1994). The role of emotion regulation in the relationship between trauma exposure and psychosocial outcomes in older people warrants empirical investigation.

The research focus on trauma exposure predominantly investigates negative outcomes. Davydov et al. (2010) highlighted that psychopathology is not experienced by all

those exposed to trauma and that protective factors, such as resilience may be factor in this. Connor & Davidson (2003) defined resilience as a measure of stress coping ability which enables a person to grow and thrive after adversity. In the adult population, the role of resilience in natural recovery from trauma and as a treatment outcome has been evidenced (Burton, Copper, Feeny & Zoellner, 2015). Resilience has been found to be linked to psychopathology (Lyons, 1991) and a related concept, “hardiness,” was found to be a mediating variable in the relationship between trauma exposure and outcomes following trauma (Waysman, Schwarwald & Soloman, 2001). Research findings on resilience in older people populations have been mixed. Nygren, Alex, Jonsen, Gustafson, Norberg & Lundman (2005) found higher resilience in older people compared to younger people. A qualitative study indicated that resilience may be important in social functioning after trauma exposure in older people (Wagnild & Young, 1990). However, Solomon & Prager (1992) found that older people with a history of trauma had greater psychiatric morbidity than those without trauma history and suggested that greater resilience was not an outcome of earlier life trauma in older people. The direct relationship between trauma exposure and resilience and resilience and psychosocial outcomes is yet to be examined within older people. The role of resilience as a potential intervening variable within the relationship between trauma exposure and psychosocial outcomes warrants investigation.

Within adult populations past research indicates direct relationships between trauma exposure and resilience, emotion regulation and psychosocial outcomes. It also indicates the role of emotion regulation and resilience as mediating variables within the relationship between trauma exposure and psychosocial outcomes. Within older people populations less evidence exists but these relationships make theoretical and clinical sense and warrants investigation. To date, no study has examined trauma exposure, resilience, emotion dysregulation and psychosocial outcomes together in one model in either adult or older people populations. The present study aims to rectify this and to develop a theoretical model to explain the role of resilience and emotion regulation in the relationship between trauma exposure and psychosocial outcomes in a clinical group of older people. Improved understanding of the relationships between these variables will help to identify whether resilience and emotional regulation could be targeted with clinical treatment to improve psychopathology in older people who have experienced trauma exposure.

Three main research questions will be addressed to achieve the aims of the study:

- 1) *What is the nature of trauma exposure in older people?*
- 2) *Does trauma exposure predict psychosocial outcomes (depression, anxiety, PTSD symptoms and quality of life) in older people?*
- 3) *Do intervening variables (emotion dysregulation and resilience) have a role in the relationship between trauma exposure and psychosocial outcomes?*

Hypotheses

It will be predicted that high rates of trauma exposure will be found. It will also be predicted that trauma exposure will be directly related to psychosocial outcomes and that resilience and emotion regulation would mediate these relationships.

3. 4 Method

Participants

Fifty nine older people (42 females and 17 males) participated in this study. They were recruited from three older people psychological therapies services in Scotland (NHS Tayside, NHS Fife and NHS Lanarkshire). The majority (86%) were recruited from NHS Tayside. This study had an uptake rate of 56% and an attrition rate of 6.4%. The participants ranged in age from 65 to 92 (mean age 72). The majority of the sample (75%) were “young-old” (age 65-74), as defined by Laidlaw et al (2003), 22% were “middle-old” (age 75-84) and 3% were “old-old” (85+). The majority of the sample (68%) reported having previous psychological or psychiatric treatment before the current episode. As defined by the Scottish Index of Multiple Deprivation (Scottish Government, 2009), the majority of participants (61%) lived within the two least deprived categories and a minority (18%) lived within the two most deprived categories.

Inclusion Criteria

People were eligible for participation if they were over 65 years old and established in psychological treatment for an anxiety or depressive disorder. Potential participants were required to be fluent English speakers and have full capacity to consent to participation. People were excluded from the study if they had a diagnosis of dementia, current issues relating to substance misuse or a current episode of psychosis.

Procedure and materials

Eligible participants were identified and invited to take part by clinicians in the services. A cross-sectional, quantitative design was used and participants met with the researcher to complete six questionnaires.

The Trauma History Questionnaire

The Trauma History Questionnaire (THQ) was developed by Green (1996) and comprehensively measures trauma exposure across the lifespan. It comprises 24 items, split into three trauma types; Crime related events, general disaster/trauma and unwanted physical and sexual experiences. Participants are required to answer “yes” or “no” to indicate their exposure to each event and then asked about frequency of the exposure and age of onset. An “other” category is used to gather information about traumas not already covered. Hooper, Stockton, Krupnick & Green, (2011) concluded it to be a reliable and valid measure and that summing the traumas experienced was the most frequently used method within the literature to quantify trauma exposure. This measure has not yet been used within older people populations but it was deemed to meet the aims of the study as it enables a comprehensive account of lifetime trauma exposure to be gathered.

The Connor Davidson Resilience Scale

The Connor Davidson Resilience Scale (CD-RISC) was developed by Connor & Davidson (2003) to measure stress coping ability and to evaluate treatment outcomes for depression, anxiety and stress reactions. It comprises 25 items, split into five subsets; personal competence, trust in oneself, positive acceptance of change, control and spiritual influences. Each item is rated on a five point likert scale and distinguishes between those with lower and higher resilience. It has been used within trauma (Davidson, Payne, Connor, Foa, Rothbaum, Hertberg & Weisler, 2005) and older people populations (Lamond, Depp, Allison, Langer, Reichstadt, Moore, Golshan, Ganiats & Jeste, 2009). In the current sample the measure demonstrated excellent internal consistency for the total score (Cronbach’s $\alpha=0.92$).

The Difficulties in Emotion Regulation Scale

The Difficulties in Emotion Regulation Scale (DERS) was developed by Gratz & Roemer (2004) and measures different aspects of emotion dysregulation. It comprises 36 items, split into six domains; Non-acceptance of emotional responses, difficulties engaging in goal directed behaviour, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies and lack of emotional clarity. It requires perceptions on the extent to which items apply on a five point likert scale. The measure has been used both in trauma (Goldsmith, Chesney, Health & Barlow, 2013) and older people populations (Orgeta, 2014; Orgeta, 2009). In the current sample the measure demonstrated good internal consistency for the total score (Cronbach's $\alpha=0.87$).

The Hospital Anxiety and Depression Scale

The Hospital Anxiety and Depression Scale (HADS) was developed by Zigmond & Snaith (1983) and comprises 14 items split into two subscales; anxiety and depression. It requires participants to rate their perceptions on the extent to which items apply to them on a five point likert scale. Research indicated this to be a reliable and valid measure for differentiating between anxiety and depression in older people (Department of Health, 2009). A systematic review indicated that a cut-off score of eight is generally used to indicate clinically significant symptoms (Bjelland, Dahl, Haug & Neckelmann, 2002). In the current sample the measure demonstrated good internal consistency for both anxiety and depression subscales (Cronbach's $\alpha=0.79$; 0.76).

The Civilian Version of the PTSD Checklist

The Civilian Version of the PTSD Checklist (PCL-C) was developed by Weathers, Litz, Herman, Huska & Keane (1993) to measure PTSD symptoms, diagnose PTSD and assess outcomes in civilian populations where multiple trauma exposure is likely. It comprises 17 items and requires participants to rate their perceptions of the extent to which items apply to them on a five point likert scale. A score of 45 has been used as a cut-off to diagnose PTSD in adult clinical populations, however a lower score of 42 has been shown to reliably diagnosis PTSD in older people populations (Cook, Elhani & Arian, 2005). In the current sample the measure demonstrated excellent internal consistency for the total score (Cronbach's $\alpha=0.93$).

The World Health Organisation Quality of Life-Old Module

The World Health Organisation Quality of Life-Old Module (WHOQOL) was developed by Power, Quinn & Schmidt, (2005) to assess generic quality of life. It comprises 24 items, split into six domains; Sensory abilities, autonomy, past, present and future activities, social participation, death and dying and intimacy. It requires perceptions of life over the past two weeks to be rated on a five point likert scale. In the current sample the measure demonstrated good internal consistency for the total score (Cronbach's $\alpha=0.77$).

Ethical approval

The study was reviewed and approved by a local ethics committee and centre for research and development (*see appendix 11 for confirmation of approval*).

3. 5 Results

Table 1 shows the means, standard deviations and range of scores for each variable. It indicates that resilience, emotion dysregulation, PTSD and quality of life scores were widely dispersed. In terms of clinically significant symptomology, 73% met criteria for anxiety (> 8), 47% for depression (>8) and 36% for PTSD (>42).

Table 1: Means & standard deviations for variables

VARIABLE & MEASURE	MEAN	STD DEVIATION	RANGE
TRAUMA EXPOSURE (THQ)	5.3	2.69	1-14
RESILIENCE (CD-RISC)	62.97	17.68	7-100
EMOTION DYSREGULATION (DERS)	88.54	24.35	46-156
ANXIETY (HADS)	10.63	4.28	2-21
DEPRESSION (HADS)	7.59	3.89	0-21
PTSD (PCL-C)	35.83	15.29	17-70
QUALITY OF LIFE (WHOQOL-OLD)	84.44	13.07	51-111

Notes: THQ, Trauma History Questionnaire (Green, 1996); CD-RISC, Connor Davidson Resilience Scale (Connor & Davidson, 2003); DERS, Dysregulation of Emotion Questionnaire (Gratz & Roemer, 2004); HADS, Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983); PCL-C, Civilian Version of the Posttraumatic Stress Symptom Checklist (Weather et al., 1993); WHOQOL-OLD, The World Health Organisation Quality of Life-Old Module (Power et al., 2005)

The nature of trauma exposure

All participants reported exposure to at least one traumatic event during their lifetime. The mean number of traumas reported was 5 with a range of 1 to 14. The majority of traumas occurred during adulthood (age 18-65) and the least occurred in later life (age 65+). A number of “other” trauma types were identified, the most common being childhood emotional abuse and domestic abuse in adulthood. Frequently reported traumas were serious illness of a close person (experienced by 69% of the sample), serious accidents (48%), serious illness of self (46%), death of spouse, romantic partner or child (39%) and non-consensual sexual touching (29%). When examined by gender, the distribution of these frequencies remained constant. Only females reported non-consensual sexual intercourse (24% of females) and domestic abuse (21%). Accidents and serious illness of self were frequently reported single incident traumas and serious illnesses of close people and non-consensual touching were frequent repeated traumas. Just under half of the sample reported repeated sexual, physical or emotional abuse in childhood and the majority of this was sexual in nature. After age 65 illness and bereavement were frequently reported.

Preliminary data analysis

IBM SPSS Statistics Version 20 was used to analyse the data. A Kolmogorov-Smirnov test tested for normality and found all variables, apart from depression and PTSD symptoms to be normally distributed. Regression residual plots were used to examine regression assumptions and indicated linear relationships and homoscedasticity.

Previous research has indicated that gender may influence trauma exposure and outcomes (Kessler et al., 2006; Kessler et al., 1995; Stein et al., 1997). Independent samples t-tests and a Mann-Whitney U test examined whether gender should be a covariate in further analysis. Significant gender differences were not indicated and gender was not used as a covariate (Trauma Exposure $t(57)=0.78$, $p=0.44$; Anxiety $t(57)=0.92$, $p=0.36$; Resilience $t(57)=-0.14$, $p=0.89$; Quality of Life $t(57)=-0.32$, $p=0.75$; Emotion Regulation $t(57)=0.66$, $p=0.51$; Depression $u=343.5$, $p=0.82$; PTSD symptoms $u=0.351.5$, $p=0.93$).

Is trauma exposure associated with psychosocial outcomes?

Table 2 shows the results of correlation analysis* investigating associations between trauma exposure and other variables. These indicate trauma exposure was positively correlated with PTSD symptoms ($r_s=0.51$, $p=0.000$). Trauma exposure was correlated with anxiety,

depression or quality of life ($r=0.09$, $p=0.509$; $r_s=0.16$, $p=0.385$; $r=-0.13$, $p=0.319$). Table 3 shows that there were no issues related to multicollinearity as all VIF values are less than 10 and tolerance values are greater than 0.2 (Field, 2013).

Table 2: Results of correlation analyses

VARIABLES	THQ	HADS-A	HADS-D	CD-RISC	PCL-C	WHO QOL-OLD	DERS
THQ	-	.09	0.16	-0.15	0.51**	-0.13	0.32*
HADS - A	.09	-	0.39**	-0.46**	0.54**	-0.34*	0.58**
HADS-D	0.16	0.39**	-	-0.53**	0.38**	-0.24	0.54**
CD-RISC	-0.15	-0.46**	-0.53**	-	-0.33*	0.62*	-0.63**
PCL-C	0.51**	0.54**	0.38**	-0.33**	-	-0.3*	0.56**
WHOQOL-OLD	-0.13	-0.34**	-0.24	0.62**	-0.3*	-	0.37**
DERS	0.32*	0.58**	0.54**	-0.63**	0.56**	0.37*	-

* $p<0.05$, ** $P<0.01$

Notes: THQ, Trauma History Questionnaire (Green, 1996); CD-RISC, Connor Davidson Resilience Scale (Connor & Davidson, 2003); DERS, Dysregulation of Emotion Questionnaire (Gratz & Roemer, 2004); HADS, Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983); PCL-C, Civilian Version of the Posttraumatic Stress Symptom Checklist (Weather et al., 1993); WHOQOL-OLD, The World Health Organisation Quality of Life-Old Module (Power et al., 2005)

*Pearson's correlations and Spearman's Rho was used to examine the relationships between variables.

Table3: Results of assessment of multicollinearity

VARIABLES	THQ	HADS-A	HADS-D	CD-RISC	PCL-C	WHOQOL-OLD	DERS
THQ	-	1.84 (0.54)	1.9 (0.53)	2.63 (0.38)	1.82 (0.55)	1.65 (0.61)	2.35 (0.43)
HADS - A	1.84 (0.54)	-	1.92 (0.52)	1.99 (0.5)	1.9 (0.53)	1.64 (0.61)	1.85 (0.54)
HADS-D	1.9 (0.53)	1.92 (0.52)	-	2.32 (0.43)	2.23 (0.45)	1.65 (0.61)	1.87 (0.53)
CD-RISC	2.63 (0.38)	1.99 (0.5)	1.71 (0.59)	-	2.28 (0.44)	1.25 (0.8)	2.3 (0.44)
PCL-C	1.82 (0.55)	1.9 (0.53)	2.23 (0.45)	2.28 (0.44)	-	2.28 (0.44)	2.22 (0.45)
WHOQOL-OLD	1.65 (0.61)	1.64 (0.61)	1.25 (0.8)	1.25 (0.8)	2.28 (0.44)	-	1.64 (0.61)
DERS	2.35 (0.43)	1.85 (0.54)	1.87 (0.53)	2.3 (0.44)	2.22 (0.45)	1.64 (0.61)	-

Notes: VIF value (Tolerance value)

THQ, Trauma History Questionnaire (Green, 1996); CD-RISC, Connor Davidson Resilience Scale (Connor & Davidson, 2003); DERS, Dysregulation of Emotion Questionnaire (Gratz & Roemer, 2004); HADS, Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983); PCL-C, Civilian Version of the Posttraumatic Stress Symptom Checklist (Weather et al., 1993); WHOQOL-OLD, The World Health Organisation Quality of Life-Old Module (Power et al., 2005).

VIF value (Tolerance value)

Do emotion dysregulation and resilience have a role in the relationship between trauma exposure and psychosocial outcomes?

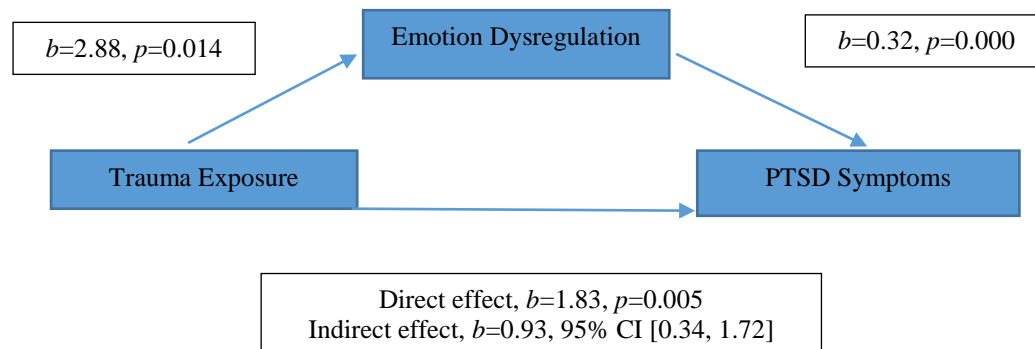
Table 2 shows that trauma exposure was not correlated with resilience ($r=-0.14$, $p=0.358$). Given this result, no further analyses was conducted with resilience as an intervening variable. The results indicated emotion dysregulation was correlated with trauma exposure, anxiety, depression, PTSD and quality of life ($r=0.36$, $p=0.12$; $r=0.57$, $p=0.000$; $r=0.46$, $p=0.001$, $r=0.63$, $p=0.000$; $r=-0.36$, $p=0.13$). Cohen's (1988) criteria indicated these results to have medium to large effect sizes.

PROCESS for SPSS (Hayes, 2013) was used to investigate intervening variables. Fritz & MacKinnon's (2007) review findings guiding decision making on methodology and sample size and indicated the bias-corrected re-sampling bootstrap method as the most powerful test and that a sample size of 71 (for a medium effect size, at the 0.5 significance level, for 3 predictor variables) was required. G*Power (Faul et al., 2007) was used to commute an a priori power analysis and results of this indicated that a sample size of 119 would be required for a medium effect size at the 0.5 significance level, for 3 predictor variables. Hayes (2009) recommends that analysis examining intervening variables should be conducted in the absence of a relationship between the outcome and predictor variables to decrease the possibility of type 1 errors being made, which are likely if other approaches, such as Baron & Kenny's (1986) causal steps approach is used. Mathieu & Taylor (2006) proposed the umbrella term "intervening" variables and makes the distinction between two particular types of intervening effects; a mediating effect which provides understanding about the nature of a relationship between a predictor and outcome variable and an indirect effect whereby a predictor and outcome variable are not directly related but are indirectly related through a significant relationship with a third variable.

Model 1: The role of emotion dysregulation in the relationship between trauma exposure and PTSD symptoms

Figure 1 illustrates that emotion dysregulation partially mediated the relationship between trauma exposure and PTSD symptoms, $b=0.93$, BCa CI (0.34, 1.72) as the bounds of the BC CI did not include zero. This represents a medium-large effect size, $K^2=0.17$, 95% BCa CI (0.06, 0.31).

Figure 1: The role of emotion dysregulation in the relationship between trauma exposure and PTSD symptoms



Models 2, 3 & 4: The role of emotion dysregulation in the relationships between trauma exposure and anxiety, depression and quality of life

Figures 2, 3, & 4 illustrate that although trauma exposure is not directly related to anxiety, depression and quality of life, it is indirectly related to each variable, through emotion dysregulation, $b=0.31$, BCa CI (0.10, 0.62); $b=0.28$, BCa CI (0.12, 0.54); $b=-0.57$, BCa CI (-1.23, -0.12) as the bounds of the BC CI do not include zero. These represent a medium-large effect size, $K^2=0.22$, 95% BCa CI (0.06, 0.41); $K^2=0.21$, 95% BCa CI (0.08, 0.38); $K^2=0.12$, 95% BCa CI (0.02, 0.26).

Figure 2: The role of emotion dysregulation in the relationship between trauma exposure and anxiety symptoms

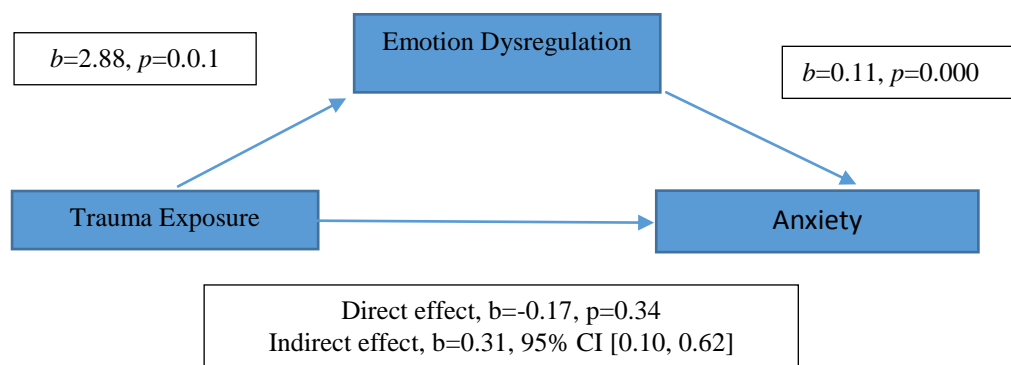


Figure 3: The role of emotion dysregulation in the relationship between trauma exposure and depression symptoms

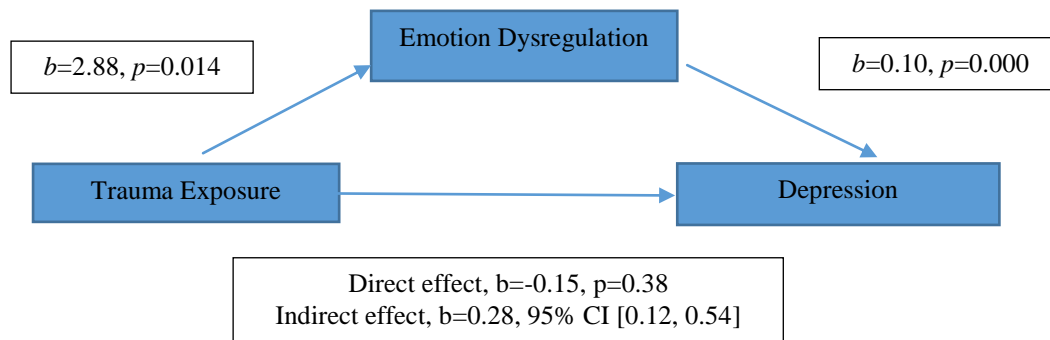
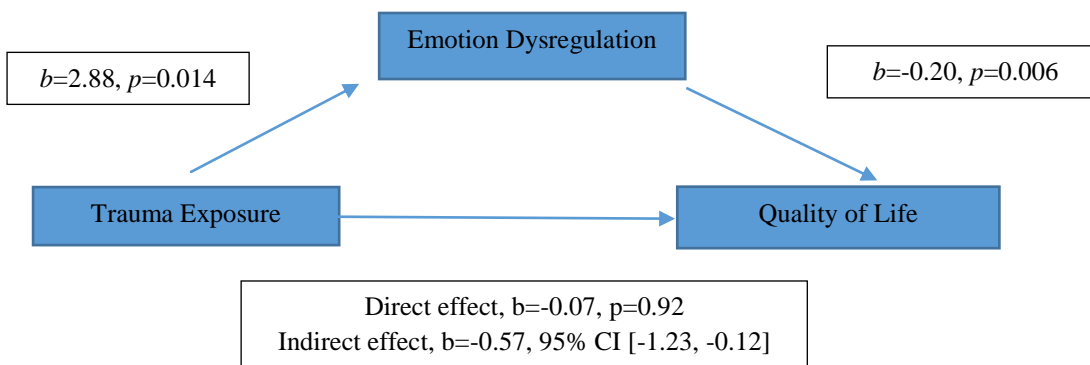


Figure 4: The role of emotion dysregulation in the relationship between trauma exposure and quality of life



3. 6 Discussion

There have been hypotheses proposed that older people with trauma histories may present differently from younger people but empirical research had yet to evidence this. This study firstly aimed to develop an understanding of the nature of trauma exposure within a clinical group of older people. It was hypothesised that trauma exposure would be high, as found in adult clinical populations (Noel et al., 2012). Results supported this hypothesis as all participants reported at least one traumatic experience during their lives. The most common traumas experienced, i.e. accidents, illnesses and bereavements is also similar to that found in adult clinical populations (Noel et al., 2012). This study was the first to use the THQ (Green, 1996) to gather a comprehensive measure of trauma exposure across the lifespan in the older people population. In clinical practice, the THQ may be a useful tool for gathering information on trauma exposure.

There have been hypotheses within older people literature that older people may not present with clinical symptoms of PTSD. Results of this study indicated a PTSD rate of 36% which evidences the magnitude of this disorder within this population. Gender was not found to influence the frequency or types of exposure reported or any of the outcomes investigated. This differs from previous research within this population which indicated males to experience higher levels of trauma exposure but females to have higher PTSD rates (Kessler et al, 1995; Kessler et al, 2006; Stein et al, 1997). This result may reflect the predominately female sample or of the changing cohort of older males who have less war experiences.

The second aim of the study was to examine whether the direct relationships found to exist between trauma exposure and psychosocial outcomes in the adult population also exist in a clinical sample of older people. Results indicated that trauma exposure was directly related to PTSD symptoms. Results also indicated that trauma exposure was not directly related to anxiety or depression symptomology. These relationships have been found in adult populations (Norman et al., 2012; Perrin et al., 2014). The findings do not support hypotheses that the impact of earlier life trauma may manifest in depressive or anxiety symptomology rather than PTSD symptomology in older people (Averill & Beck, 2000). The method of quantifying trauma exposure over the lifespan may have impacted on these results. Within the adult population, there is evidence that specific trauma types, such as childhood maltreatment (Norman et al., 2012) and sexual abuse (Perrin et al., 2014) is directly related to these anxiety and depressive symptomology. As PTSD may not often be the presenting clinical problem in older people (Aldwin et al., 1996; Cook & Niederehe, 2007), the results of this study highlight the importance of examining PTSD symptomology, alongside other symptomology in older people who present with high levels of trauma exposure.

The final aim was to investigate the role of emotion dysregulation and resilience as intervening variables in the relationship between trauma exposure and psychosocial outcomes. Research within adult populations has evidenced the indirect role of emotion dysregulation within these relationships (Ehring & Quack, 2010; Lilly et al., 2004). Results of this study supported those found within the adult population and indicated that emotion dysregulation partially mediated the relationship between trauma exposure and PTSD symptoms. Results also indicated that trauma exposure was indirectly related to anxiety, depression and quality of life through emotion dysregulation. Although past research has

indicated the importance of particular emotion regulation strategies, such as emotional suppression, this study supports findings by Seligowski et al. (2015) which evidences the importance of emotion dysregulation as a construct. From the results of this study, a focus on targeting emotion dysregulation within psychological treatment warrants further investigation.

The role of resilience as an intervening variable in the relationship between trauma exposure and psychosocial outcomes was not supported. Past research has indicated resilience to have a role in the recovery from trauma in both adult (Burton et al., 2015; Lyons, 1991) and older people populations (Wagnild & Young, 1990) and found a related construct, hardiness, to mediate the relationship between trauma exposure and outcomes in an adult group (Nygren et al. 2005). The definition of the variable may be a factor in results as Davydov et al. (2010) highlighted inconsistencies within the literature of defining the construct as it has been proposed as a positive skill developed in response to adversity in some studies and an outcome from adversity in others. Although this study was unable to provide evidence for the role of resilience as an intervening variable, the associations found between resilience and emotion dysregulation indicate that further work is warranted. From the correlation results, it could be hypothesised that trauma exposure and resilience could be indirectly related through emotion dysregulation or that the relationship between trauma exposure and emotion dysregulation may be mediated by resilience.

Limitations and directions for future research

Generalisability to other clinical populations of older people is a limitation of this study because the sample consisted predominantly of younger, affluent and community dwelling females. This may reflect the demographics of those motivated to participate in research. Dinnen et al. (2015) highlighted this to be a common problem within older people's research. Gender was investigated as a confounding variable but other confounding variables, such as number of treatment sessions, cognitive ability and specific health problems were not controlled for and future studies should consider these. As a sample of 59 was recruited, it is important to highlight that the mediation analyses were also underpowered (Faul et al, 2007).

The role of emotion dysregulation in the relationship between trauma exposure and psychosocial outcomes has been evidenced in this study. Further work should continue to investigate this model to develop its evidence base so that treatment recommendations can be

proposed. The causality method of investigating these variables has limitations in providing understanding of why these relationships exist. The reasons why people with a trauma history experience PTSD symptoms is unclear. Previous research has suggested that a delayed, chronic or episodic symptom pattern may be evident (Busuttil, 2004), that the development onset of trauma may be important (Bottche et al., 2011) or that stressors in later life may trigger symptoms (Port et al., 2001). Further work should aim to explore PTSD symptom from a developmental stance. Past research in the adult population has indicated childhood trauma to be associated with higher levels of emotion dysregulation in comparison to survivors of trauma experienced later in life (Ehring & Quack, 2010) and that emotion regulation mediates the relationship between childhood trauma and adult PTSD (Burns et al., 2010; Ehring & Quack, 2010; Lilly et al., 2014; Stevens et al., 2013), further investigating of whether childhood trauma leads to differences in the model warrants investigation. Factors which explain why emotion dysregulation results from trauma exposure and are maintained in later life would also warrant investigation. For example, it has been proposed that childhood trauma may lead to enduring patterns of maladaptive emotion regulation (Stevens et al., 2013) and that difficulties in emotion regulation may indirectly influence the maintenance of PTSD symptoms through their effect on interpersonal relationships and overall functioning (Cloitre, Miranda, Stovall-McClough & Han, 2005). Rather than investigating differences between age groups, further work should aim to examine emotion dysregulation from a developmental stance.

Conclusions

The results of this study evidence that the nature of trauma exposure and the relationships between trauma exposure psychosocial outcomes in older and younger people are similar. Therefore, rather than focusing on age related differences, future work should focus on understanding trauma exposure, PTSD symptoms, resilience and emotion dysregulation from a developmental theoretical stance.

3. 7 References

- Aldao, A., Nolen-Hoeksema, S. & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, 30, 217-237.
- Aldwin, C.M., Sutton, K.J., Chiara, G. & Spiro, A. (1996). Age differences in stress, coping and appraisal: findings for the Normative Aging Study. *Journals of Gerontology: Series B: Psychological Sciences & Social Sciences*, 51, 179-188.
- American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: American Psychiatric Association.
- Ardalan, A., Mazaheri, M., Vanrooyen, M., Mowafi, H., Nedjat, S., Holakouie-Naieni, K. & Russel, M. (2010). Post-disaster quality of life among older survivors five years after the Bam earthquake: implications for recovery policy. *Ageing & Society*, 1-19.
- Averill, A. B. & Beck, J. G. (2000). Posttraumatic stress disorder in older adults: a conceptual review. *Journal of Anxiety Disorders*, 14, 2, 133-156.
- Baron, R.M. & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical; considerations, *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Bisson, J. I. & Andrew, M. (2007). Psychological treatment of post-traumatic stress disorder (PTSD). *Cochrane Database of Systematic Reviews*, 3.
- Bisson, J. I., Roberts, A. M. & Lewis, C. (2013). Psychological therapies for chronic post-traumatic stress disorder (PTSD) in adults (Review). *Cochrane Database of Systematic Reviews*, 12.
- Bjelland, I., Dahl, A.A., Haug, T.T. & Neckelmann, D. (2002). The validity of the Hospital Anxiety and Depression Scale. An updated literature review. *Journal of Psychosomatic Research*, 52, 2.
- Bottche, M., Kuwert, P. & Knaevelsrud, C. (2011). Posttraumatic stress disorder in older adults: an overview of characteristics and treatment approaches. *International Journal of Geriatric Psychiatry*, 27, 3, 230-239.

- Bruce, S.E., Weisberg, R.B., Dolan, R.T. Machan, J.T., Kessler, R.C., Manchester, G., Culpepper, L. & Keller, M.B. (2001). Trauma and Posttraumatic stress disorder in primary care patients. *Journal of Clinical Psychiatry*, 3, 5, 211-217.
- Burns, E.E., Jackson, J.L, Harding, H.G. (2010). Child maltreatment, emotion regulation and posttraumatic stress: The impact of emotional abuse. *Journal of aggression, Maltreatment and Trauma*, 19, 801-819.
- Burton, M.S., Copper, A.A., Feeny, N.C. & Zoellner, L.A. (2015). The enhancement of natural resilience in trauma interventions. *Journal of Contemporary Psychotherapy*,
- Busuttil, W. (2004). Presentations and management of Post-traumatic stress disorder and the elderly: a need for investigation. *International Journal of Geriatric Psychiatry*, 19, 429-439.
- Cloitre, M., Miranda, R., Stovall-McClough, K.C. & Han, H. (2005). Beyond PTSD: Emotion regulation and interpersonal problems as predictors of functional impairment in survivors of childhood abuse. *Behavior Therapy*, 36, 119-124.
- Cohen, J. (1988). *Statistical power analysis for the behaviour sciences* (2nd ed.). Hillsdale: Lawrence Earlbaum Associates.
- Connor, K.M. & Davidson, J.R. (2003). Development of a new resilience scale: the Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, 18, 2, 76-82.
- Cook, J.M., Elhai, J.D. & Arean, P.A. (2005). Psychometric properties of the PTSD Checklist with older primary care patients. *Journal of Traumatic Stress*, 18, 4, 371-6.
- Cook, J.M. & Niederehe, G. (2007). Trauma in older adults. In Friedman, M.J., Keane, T.M. & Resick, P.A. (Eds.), *Handbook of PTSD; science and practice* (pp. 253-276). New York: Guild Press.
- Cook, J. M. & O'Donnell, C. (2005). Assessment and psychological treatment of Posttraumatic stress disorder in older adults. *Journal of Geriatric Psychiatry and Neurology*, 18, 2, 61-71.

- Davidson, J.R., Payne, V.M., Connor, K.M, Foa, E.B., Rothbaum, B.O., Hertzberg, M.A. & Weisler, R.H. (2005). Trauma, resilience and saliostatis: effects of treatment in post-traumatic stress disorder. *International Clinical Psychopharmacology*, 20, 1, 43-48.
- Davydov, D.M., Stewart, R., Ritchie, K., Chaudieu. (2010). Resilience and mental health. *Clinical Psychology Review*, 30, 479-495.
- Department of Health. (2009). *An overview of patient-reported outcome measures for people with anxiety and depression*. Oxford: Department of Health.
- De Vies, G. & Olff, M. (2009). The lifetime prevalence of traumatic events and posttraumatic stress disorder in the Netherlands. *Journal of Traumatic Stress*, 22, 4, 259-267.
- Dinnen, S., Simiola, V. & Cook, J.M. (2015). Post-traumatic stress disorder in older adults: as systematic review of the psychotherapy treatment literature. *Aging & Mental Health*, 19, 2, 144-150.
- Ehring, T. & Quack, D. (2010). Emotion regulation difficulties in trauma survivors: The role of trauma type and PTSD symptom severity. *Behavior Therapy*, 41, 587-598.
- Faul, R., Erdfelder, E., Lang, A-G. & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioural and biomedical sciences. *Behavior Research Methods*, 39, 175-191.
- Field, A. *Discovering Statistics Using IBM SPSS Statistics*. 4th Edition. London: Sage Publications.
- Foa, E.B., Keane, T.M. & Friedman, M.J. (2000). *Effective treatments for PTSD: Practice guidelines from the International Society for Traumatic Stress Studies*. New York: Guildford Press.
- Fritz, M.S. & Mackinnon, D.P. (2007). Required sample size to detect the mediated effect. *Psychological Science*, 18, 3, 233-239.
- Goldsmith, R.E., Chesney, S.A., Heath, N.M. & Barlow, M.R. (2013). Emotion regulation difficulties mediate associations between betrayal trauma and symptoms of

- Posttraumatic stress, depression and anxiety. *Journal of Traumatic Stress*, 26, 376-384.
- Gratz, K.L. & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure and initial validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behavioural Assessment*, 26, 1, 41-54.
- Green, B.L. (1996). Trauma History Questionnaire. In B.H. Stamm (Ed.), *Measurement of Stress, trauma and adaptation* (366-369). Lutherville: Sidran Press.
- Hayes, A.F. (2009). Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium. *Communication Monographs*, 76, 4, 408-420.
- Hayes, A.F. (2013). *Introduction to Mediation, Moderation and Conditional Process Analysis: A Regression Based Approach*. New York: Guildford.
- Herrmann, N. & Eryavec, G. (1994). Delayed onset post-traumatic stress disorder in World War II veterans. *Canadian Journal of Psychiatry*, 3, 439-441.
- Hilton, C. (1997). Media Triggers of Post-traumatic stress disorder 50 years after the Second World War. *International Journal of Geriatric Psychiatry*, 12, 862-867.
- Hooper, L.M., Stockton, P., Krupnick, J.L, Green, B.L. (2011). Development, use and psychometric properties of the Trauma History Questionnaire. *Journal of Loss & Trauma*, 16, 3, 258-283.
- Keane, T.M., Marshall, A. D. & Casey, T.T. (2006). Posttraumatic stress disorder: etiology, epidemiology and treatment outcome. *Annual Review of Clinical Psychology*, 2, p161-197.
- Kessler, R.C., Sonnega, A., Bromet, E., Hughes, M. & Nelson, C.B. (1995). Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry*, 52, 12 1048-1060.
- Kessler, R.C., Berglund, P. Demler, O., Jin, R., Merikangas, K.R. & Walters, E.E. (2005). Lifetime prevalence and age-of-onset distribution of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62, 6, 593-602.

- Laidlaw, K., Thompson, L.W., Gallagher-Thompson, D. & Dick-Siskin, L. (2003). *Cognitive Behaviour Therapy with Older People*. Chichester: John Wiley & Sons Ltd.
- Lamond, A., Depp, C., Allison, M., Langer, R., Reichstadt, J., Moore, D., Golshan, S., Ganiats, T. & Jeste, D. (2009). Measurement and predictors of resilience in community dwelling older women. *Journal of Psychiatric research*, 43- 148-154.
- Lapp, L.K., Agbokou, C. & Ferreri, F. (2011). PTSD in the elderly: the interaction between trauma and aging. *International Psychogeriatrics*, 23, 6, 858-868.
- Lilly, M.M., Jordan, M.J. & Bridgett, D.J. (2014). Using SEM to examine emotion regulation and re-victimisation in predicting PTSD symptoms among childhood abuse survivors. *Psychological Trauma: Theory, Research, Practice and Policy*, 6, 6, 644-651.
- Livingston, H., Livingston, M. & Fell, S. (1994). The Lockerbie disaster: A 3-year follow-up of elderly victims. *International Journal of Geriatric Psychiatry*, 9, 989-994.
- Lyons, J. (1991). Strategies for assessing the potential for positive adjustment following trauma. *Journal of Traumatic Stress*, 4, 93-111.
- Mathieu, J. E. & Taylor, S.R. (2006). Clarifying conditions and decision points for mediational type inferences in organisation behaviour. *Journal of Organizational Behavior*, 27, 1031-1056.
- McLeod, A. (1994). The reactivation of posttraumatic stress disorder in later life. *Australian and New Zealand Journal of Psychiatry*, 28, 625-634.
- Norman et al, R.E., Byambaa, M., De, R., Butchart, A., Scott, J. (2012). The long-term health consequences of child physical abuse, emotional abuse and neglect: A systematic review and meta-analysis. *PLOS Medicine*, 9, 11, 1-30.
- Norris, F.H., Kaniasty, K., Conrad, M.L, Inman, G.L., Murphy, A.D. (2002). Placing age differences in cultural context: a comparison of the effects of age on PTSD after disasters in the United States, Mexico and Poland. *Journal of Clinical Geriatric Psychology*, 8, 3, 153-173.
- Nygren, B., Alex, L., Jonsen, E., Gustafson, Y., Norberg, A. & Lundman, B. (2005). Resilience, sense of coherence, purpose in life and self-transcendence in relation to

- perceived physical and mental health among the oldest old. *Aging & Mental Health*, 9, 354–362.
- Orgeta, V. (2009). Specificity of age differences in emotion regulation. *Aging & Mental Health*, 13, 6, 818-826.
- Orgeta, V. (2011). Emotion dysregulation and anxiety in late adulthood. *Journal of anxiety Disorders*, 25, 8, 1019-1023.
- Owens, G.P., Baker, D.G., Kasckow, J., Ciesla, J.A. & Mohamed, S. (2005). Review of assessment and treatment of PTSD among elderly American armed forces veterans. *International Journal of Geriatric Psychiatry*, 20, 1118-1130.
- Perrin, M., Vandeleur, C., Castelao, E. Rothen, S., Glaus, J., Vollenweider, P. & Preisig, M. (2014). Determinants of the development of post-traumatic stress disorder, in the general population. *Social Psychiatry and Psychiatric Epidemiology*, 49, 3, 447-457.
- Port, C.L., Engdahl, B. & Frazier, P.A. (2001). A longitudinal and retrospective study of PTSD among older POWs. *The American Journal of Psychiatry*, 158, 1474-1479.
- Power, M., Quinn, K. Schmidt, S.; WHOQOL-OLD Group. (2005). Development of the WHOQOL-old module. *Quality of Life Research: an international journal of quality of life aspects of care and treatment*, 14, 10, 2197-2214.
- Schnurr, P.P., Lunney, C.A., Bovin, M.J. & Marx, B.P. (2009). Posttraumatic stress disorder and quality of life: extension of findings to veterans of the wars in Iraq and Afghanistan. *Clinical Psychology Review*, 29, 8, 727-35.
- Scottish Executive (2007). *All our futures: planning for a Scotland with an ageing population* (Vol 1: Summary and action plan). Edinburgh. Scottish Executive.
- Scottish Government. (2009). *SIMD Scottish Index of Multiple Deprivation* (2009 General Report). Edinburgh: A Scottish Government National Statistics Publication.
- Seligowski, A.V., Lee, D.J., Bardeen, J.R. & Orcutt, H.K. (2015). Emotion regulation and Posttraumatic stress symptoms: a meta-analysis. *Cognitive Behaviour Therapy*, 44, 2, 87-102.

- Solomon, Z. & Prager, E. (1992). Elderly Israeli Holocaust survivors during the Persian Gulf War: a study of psychological distress. *The American Journal of Psychiatry*, 149, 1707-1710.
- Stein, M.B., Walker, J.R., Hazen, A.L. & Forde, D.R. (1997). Full and partial posttraumatic stress disorder: findings for a community survey. *American Journal of Psychiatry*, 154, 8, 1114-1119.
- Stevens, N.R., Gerhart, J., Goldsmith, R.E., Health, N.M., Chesney, S.A. & Hobfoll, S.E. (2013). Emotion regulation difficulties, low social support and interpersonal violence mediate the link between childhood abuse and posttraumatic stress symptoms. *Behavior Therapy*, 44, 152-161.
- Summers, M., Hyer, L., Boyd, S. & Boudewyns, P. (1996). Diagnosis of later-life PTSD among elderly combat veterans. *Journal of Clinical Gerontology*, 2, 103-115.
- Thorp, S.R., Sones, H.M. & Cook, J.M. (2011). Posttraumatic stress disorder among older adults. In K.H. Sorocco & S. Lauderdale (Eds.), *Cognitive behavior therapy with older adults: Innovations across care settings*. Springer Publishing Company.
- Wagnild, G. & Young, H.M. (1990). Resilience among older women. *The Journal of Nursing Scholarship*, 22, 4, 252-5.
- Waysman, M, Schwarwald, J. & Soloman, Z. (2001). Hardiness: an examination of its relationship with positive and negative long term changes following trauma. *Journal of Traumatic Stress*, 14, 3, 531-48.
- Weathers, F.W., Litz, B.T., Herman, D.S., Huska, J.A. & Keane, T.M. (1993). *The PTSD Checklist (PCL): Reliability, validity and diagnostic utility*. Paper presented at the 9th Annual Conference of ISTSS, San Antonio.
- Zigmond, A.S. & Snaith, R.P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica*, 67, 6, 361-70.

4. References

(All references cited in thesis)

- Aldao, A., Nolen-Hoeksema, S. & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, 30, 217-237.
- Aldwin, C.M., Sutton, K.J., Chiara, G. & Spiro, A. (1996). Age differences in stress, coping and appraisal: findings for the Normative Aging Study. *Journals of Gerontology: Series B: Psychological Sciences & Social Sciences*, 51, 179-188.
- American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: American Psychiatric Association.
- Ardalan, A., Mazaheri, M., Vanrooyen, M., Mowafi, H., Nedjat, S., Holakouie-Naieni, K. & Russel, M. (2010). Post-disaster quality of life among older survivors five years after the Bam earthquake: implications for recovery policy. *Ageing & Society*, 1-19.
- Averill, A. B. & Beck, J. G. (2000). Posttraumatic stress disorder in older adults: a conceptual review. *Journal of Anxiety Disorders*, 14, 2, 133-156.
- Baron, R.M. & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical; considerations, *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Berking, M., Orth, U., Wupperman, P., Meier, L.L. & Caspar, F. (2008). Prospective effects of emotion-regulation skills on emotional adjustment. *Journal of Counselling Psychology*, 55, 4, 485-494.
- Berking, M., Wirtz, C.M., Svaldi, J. & Hofmann, S.G. (2014). Emotion regulation predicts symptoms of depression over five years. *Behaviour Research and Therapy*, 57, 13-20.
- Birditt, K.S. (2014). Age differences in emotional reaction to daily negative social encounters. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 69, 4, 557-566.
- Bisson, J. I. & Andrew, M. (2007). Psychological treatment of post-traumatic stress disorder (PTSD). *Cochrane Database of Systematic Reviews*, 3.

- Bisson, J. I., Roberts, A. M. & Lewis, C. (2013). Psychological therapies for chronic post-traumatic stress disorder (PTSD) in adults (Review). *Cochrane Database of Systematic Reviews*, 12.
- Bjelland, I., Dahl, A.A., Haug, T.T. & Neckelmann, D. (2002). The validity of the Hospital Anxiety and Depression Scale. An updated literature review. *Journal of Psychosomatic Research*, 52, 2.
- Bonanno, G.A., Papa, A., Lalande, K., Westphal, M. & Coifman, K. (2004). The importance of being flexible: The ability to both enhance and suppress emotional expression predicts long-term adjustment. *Psychological Science*, 15, 7, 482-487.
- Bottche, M., Kuwert, P. & Knaevelsrud, C. (2011). Posttraumatic stress disorder in older adults: an overview of characteristics and treatment approaches. *International Journal of Geriatric Psychiatry*, 27, 3, 230-239.
- Bruce, S.E., Weisberg, R.B., Dolan, R.T. Machan, J.T., Kessler, R.C., Manchester, G., Culpepper, L. & Keller, M.B. (2001). Trauma and Posttraumatic stress disorder in primary care patients. *Journal of Clinical Psychiatry*, 3, 5, 211-217.
- Brummer, L. & Stopa, L. (2013). The influence of age on emotion regulation strategies and psychological distress. *Behavioural and Cognitive Psychotherapy*, 42, 6, 668-81.
- Burns, E.E., Jackson, J.L, Harding, H.G. (2010). Child maltreatment, emotion regulation and posttraumatic stress: The impact of emotional abuse. *Journal of aggression, Maltreatment and Trauma*, 19, 801-819.
- Burton, M.S., Copper, A.A., Feeny, N.C. & Zoellner, L.A. (2015). The enhancement of natural resilience in trauma interventions. *Journal of Contemporary Psychotherapy*,
- Busuttil, W. (2004). Presentations and management of Post-traumatic stress disorder and the elderly: a need for investigation. *International Journal of Geriatric Psychiatry*, 19, 429-439.
- Cartensen, L.L. (1993). Motivation for social contact across the life span: A theory of socioemotional selectivity. In J.E. Jacobs (Eds), *Nebraska symposium on motivation* (pp 209-254). Lincoln: University of Nebraska Press.

- Charles, S.T. & Cartensen, L.L. (2009). Social and Emotional Aging. *The Annual Review of Psychology*, 61, 383-409.
- Charles, S.T. (2010). Strength and Vulnerability Integration: A model of emotional well-being across adulthood. *Psychological Bulletin*, 136, 1068-1090.
- Charles, S.T. & Piazza, J.R. (2007). Memories of social interactions: Age differences in emotional intensity. *Psychology & Aging*, 22, 300-309.
- Cheavens, J.S., Rosenthal, M.Z., Banawan, S.F. & Lynch, T.R. (2008). Differences in emotional experiences and emotion regulation as a function of age and psychiatric condition. *Aging & Mental Health*, 12, 2, 478-487.
- Centre for Reviews and Dissemination (2009). *Systematic Reviews: CRD's guidance for undertaking reviews in health care*, CRD: University of York
- Cloitre, M., Miranda, R., Stovall-McClough, K.C. & Han, H. (2005). Beyond PTSD: Emotion regulation and interpersonal problems as predictors of functional impairment in survivors of childhood abuse. *Behavior Therapy*, 36, 119-124.
- Cohen, J. (1988). *Statistical power analysis for the behaviour sciences* (2nd ed.). Hillsdale: Lawrence Earlbaum Associates.
- Connor, K.M. & Davidson, J.R. (2003). Development of a new resilience scale: the Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, 18, 2, 76-82.
- Cook, J.M., Elhai, J.D. & Arean, P.A. (2005). Psychometric properties of the PTSD Checklist with older primary care patients. *Journal of Traumatic Stress*, 18, 4, 371-6.
- Cook, J.M. & Niederehe, G. (2007). Trauma in older adults. In Friedman, M.J., Keane, T.M. & Resick, P.A. (Eds.), *Handbook of PTSD; science and practice* (pp. 253-276). New York: Guild Press.
- Cook, J. M. & O'Donnell, C. (2005). Assessment and psychological treatment of Posttraumatic stress disorder in older adults. *Journal of Geriatric Psychiatry and Neurology*, 18, 2, 61-71.
- Davidson, J.R., Payne, V.M., Connor, K.M, Foa, E.B., Rothbaum, B.O., Hertzberg, M.A. & Weisler, R.H. (2005). Trauma, resilience and saliostatis: effects of treatment in post-traumatic stress disorder. *International Clinical Psychopharmacology*, 20, 1, 43-48.

- Davydov, D.M., Stewart, R., Ritchie, K., Chaudieu. (2010). Resilience and mental health. *Clinical Psychology Review*, 30, 479-495.
- Department of Health. (2009). *An overview of patient-reported outcome measures for people with anxiety and depression*. Oxford: Department of Health.
- De Vries, G. & Olff, M. (2009). The lifetime prevalence of traumatic events and posttraumatic stress disorder in the Netherlands. *Journal of Traumatic Stress*, 22, 4, 259-267.
- Dinnen, S., Simiola, V. & Cook, J.M. (2015). Post-traumatic stress disorder in older adults: as systematic review of the psychotherapy treatment literature. *Aging & Mental Health*, 19, 2, 144-150.
- Eftekhari, A., Zoellner, L.A. & Vigil, S.A. (2009). Patterns of emotion regulation and psychopathology. *Anxiety, Stress & Coping*, 22, 5, 571-586.
- Ehring, T. & Quack, D. (2010). Emotion regulation difficulties in trauma survivors: The role of trauma type and PTSD symptom severity. *Behavior Therapy*, 41, 587-598.
- English, T. & John, O.P. (2013). Understanding the social effects of emotion regulation: The mediating role of authenticity for individual differences in suppression. *Emotion*, 13, 2, 314, 329.
- Faul, R., Erdfelder, E., Lang, A-G. & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioural and biomedical sciences. *Behavior Research Methods*, 39, 175-191.
- Field, A. *Discovering Statistics Using IBM SPSS Statistics*. 4th Edition. London: Sage Publications.
- Foa, E.B., Keane, T.M. & Friedman, M.J. (2000). *Effective treatments for PTSD: Practice guidelines from the International Society for Traumatic Stress Studies*. New York: Guildford Press.
- Fritz, M.S. & Mackinnon, D.P. (2007). Required sample size to detect the mediated effect. *Psychological Science*, 18, 3, 233-239.

- Garnefski, N. & Kraaij, V. (2006). Relationships between cognitive emotion regulation strategies and depressive symptoms. *Personality and Individual Differences*, 40, 1659-1669.
- Gerolimatos, L.A. & Edelstein, B.A. (2012₁). Anxiety-related constructs mediate the relation between age and health anxiety. *Aging & Mental Health*, 16, 8, 975-982.
- Gerolimatos, L.A. & Edelstein, B.A. (2012₂). Predictors of health anxiety among older and young adults. *International Psychogeriatrics*, 24, 12, 1998-2008.
- Goldsmith, R.E., Chesney, S.A., Heath, N.M. & Barlow, M.R. (2013). Emotion regulation difficulties mediate associations between betrayal trauma and symptoms of Posttraumatic stress, depression and anxiety. *Journal of Traumatic Stress*, 26, 376-384.
- Gratz, K.L. & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure and initial validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behavioural Assessment*, 26, 1, 41-54.
- Green, B.L. (1996). Trauma History Questionnaire. In B.H. Stamm (Ed.), *Measurement of Stress, trauma and adaptation* (366-369). Lutherville: Sidran Press.
- Gross, J.J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, 2, 271-299.
- Gross, J.J. (2013). Emotion regulation: Taking stock and moving forward. *Emotion*, 13, 3, 359-365.
- Gross, J.J., Richards, J.M. & John, O.P. (2006). Emotion regulation in everyday life. In Lewis, M., Haviland-Jones, J.M.; Barrett, L.F. (pp. 497-512). *Handbook of Emotions* (3rd ed.). New York: The Guildford Press.
- Hayes, A.F. (2009). Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium. *Communication Monographs*, 76, 4, 408-420.
- Hayes, A.F. (2013). *Introduction to Mediation, Moderation and Conditional Process Analysis: A Regression Based Approach*. New York: Guildford.

- Herrmann, N. & Eryavec, G. (1994). Delayed onset post-traumatic stress disorder in World War II veterans. *Canadian Journal of Psychiatry*, 3, 439-441.
- Hilton, C. (1997). Media Triggers of Post-traumatic stress disorder 50 years after the Second World War. *International Journal of Geriatric Psychiatry*, 12, 862-867.
- Hooper, L.M., Stockton, P., Krupnick, J.L, Green, B.L. (2011). Development, use and psychometric properties of the Trauma History Questionnaire. *Journal of Loss & Trauma*, 16, 3, 258-283.
- John, O.P. & Gross, J.J. (2004). Healthy and unhealthy emotion regulation: Personality process, individual differences and lifespan development. *Journal of Personality*, 72, 1301-1333.
- Keane, T.M., Marshall, A. D. & Casey, T.T. (2006). Posttraumatic stress disorder: etiology, epidemiology and treatment outcome. *Annual Review of Clinical Psychology*, 2, p161-197.
- Kessler, E. & Staudinger, U.M. (2009). Affective experiences in adulthood and old age: The role of affective arousal and perceived affect regulation. *Psychology and Aging*, 24, 2, 349-362.
- Kessler, R.C., Sonnega, A., Bromet, E., Hughes, M. & Nelson, C.B. (1995). Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry*, 52, 12 1048-1060.
- Kessler, R.C., Berglund, P. Demler, O., Jin, R., Merikangas, K.R. & Walters, E.E. (2005). Lifetime prevalence and age-of-onset distribution of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62, 6, 593-602.
- Laidlaw, K., Thompson, L.W., Gallagher-Thompson, D. & Dick-Siskin, L. (2003). *Cognitive Behaviour Therapy with Older People*. Chichester: John Wiley & Sons Ltd.
- Lamond, A., Depp, C., Allison, M., Langer, R., Reichstadt, J., Moore, D., Golshan, S., Ganiats, T. & Jeste, D. (2009). Measurement and predictors of resilience in community dwelling older women. *Journal of Psychiatric research*, 43- 148-154.
- Landis, J.R. & Koch, G.G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33, 1, 159-174.

- Lapp, L.K., Agbokou, C. & Ferreri, F. (2011). PTSD in the elderly: the interaction between trauma and aging. *International Psychogeriatrics*, 23, 6, 858-868.
- Lilly, M.M., Jordan, M.J. & Bridgett, D.J. (2014). Using SEM to examine emotion regulation and re-victimisation in predicting PTSD symptoms among childhood abuse survivors. *Psychological Trauma: Theory, Research, Practice and Policy*, 6, 6, 644-651.
- Livingston, H., Livingston, M. & Fell, S. (1994). The Lockerbie disaster: A 3-year follow-up of elderly victims. *International Journal of Geriatric Psychiatry*, 9, 989-994.
- Lyons, J. (1991). Strategies for assessing the potential for positive adjustment following trauma. *Journal of Traumatic Stress*, 4, 93-111.
- Martini, T.S. & Busseri, M. (2010). Emotion regulation strategies and goals as predictors of older mothers' and adult daughters' helping-related subjective well-being. *Psychology and Aging*, 25, 1, 48-59.
- Mathieu, J. E. & Taylor, S.R. (2006). Clarifying conditions and decision points for mediational type inferences in organisation behaviour. *Journal of Organizational Behavior*, 27, 1031-1056.
- McLeod, A. (1994). The reactivation of posttraumatic stress disorder in later life. *Australian and New Zealand Journal of Psychiatry*, 28, 625-634.
- Norman et al, R.E., Byambaa, M., De, R., Butchart, A., Scott, J. (2012). The long-term health consequences of child physical abuse, emotional abuse and neglect: A systematic review and meta-analysis. *PLOS Medicine*, 9, 11, 1-30.
- Norris, F.H., Kaniasty, K., Conrad, M.L, Inman, G.L., Murphy, A.D. (2002). Placing age differences in cultural context: a comparison of the effects of age on PTSD after disasters in the United States, Mexico and Poland. *Journal of Clinical Geriatric Psychology*, 8, 3, 153-173.
- Nolen-Hoeksema, S. & Aldao, A. (2011). Gender and age differences in emotion regulation strategies and their relationship to depressive symptoms. *Personality and Individual Differences*, 51, 704-708.
- Nygren, B., Alex, L., Jonsen, E., Gustafson, Y., Norberg, A. & Lundman, B. (2005). Resilience, sense of coherence, purpose in life and self-transcendence in relation to

- perceived physical and mental health among the oldest old. *Aging & Mental Health*, 9, 354–362.
- Orgeta, V. (2009). Specificity of age differences in emotion regulation. *Aging & Mental Health*, 13, 6, 818-826.
- Orgeta, V. (2011). Emotion dysregulation and anxiety in late adulthood. *Journal of anxiety Disorders*, 25, 8, 1019-1023.
- Owens, G.P., Baker, D.G., Kasckow, J., Ciesla, J.A. & Mohamed, S. (2005). Review of assessment and treatment of PTSD among elderly American armed forces veterans. *International Journal of Geriatric Psychiatry*, 20, 1118-1130.
- Perrin, M., Vandeleur, C., Castelao, E. Rothen, S., Glaus, J., Vollenweider, P. & Preisig, M. (2014). Determinants of the development of post-traumatic stress disorder, in the general population. *Social Psychiatry and Psychiatric Epidemiology*, 49, 3, 447-457.
- Philips, L.H., Henry, J.D., Hoise, J.A. & Milne, A.B. (2006). Age, anger regulation and well-being. *Aging & Mental Health*, 10, 3, 250-256.
- Port, C.L., Engdahl, B. & Frazier, P.A. (2001). A longitudinal and retrospective study of PTSD among older POWs. *The American Journal of Psychiatry*, 158, 1474-1479.
- Power, M., Quinn, K. Schmidt, S.; WHOQOL-OLD Group. (2005). Development of the WHOQOL-old module. *Quality of Life Research: an international journal of quality of life aspects of care and treatment*, 14, 10, 2197-2214.
- Radkovky, A., Bockting, C.L.H., McArdle, J.J. & Berking, M. (2014). Successful emotion regulation skills application predicts subsequent reduction of symptoms severity during treatment of major depressive disorder. *Journal of Counselling and Clinical Psychology*, 82, 2, 248-262.
- Rovenpor, D.R., Skogsberg, N.J. & Isaacowitz, D.M. (2013). The choices we make: an examination of situation selection in younger and older adults. *Psychology and Aging*, 28, 2, 365-376.
- Schnurr, P.P., Lunney, C.A., Bovin, M.J. & Marx, B.P. (2009). Posttraumatic stress disorder and quality of life: extension of findings to veterans of the wars in Iraq and Afghanistan. *Clinical Psychology Review*, 29, 8, 727-35.

- Scottish Executive (2007). *All our futures: planning for a Scotland with an ageing population* (Vol 1: Summary and action plan). Edinburgh. Scottish Executive.
- Scottish Government. (2009). *SIMD Scottish Index of Multiple Deprivation* (2009 General Report). Edinburgh: A Scottish Government National Statistics Publication.
- Scottish Intercollegiate Guidelines Network (SIGN). (2013). SIGN 50. *A guideline developer's handbook* (revised edition). Edinburgh: SIGN.
- Seligowski, A.V., Lee, D.J., Bardeen, J.R. & Orcutt, H.K. (2015). Emotion regulation and Posttraumatic stress symptoms: a meta-analysis. *Cognitive Behaviour Therapy*, 44, 2, 87-102.
- Solomon, Z. & Prager, E. (1992). Elderly Israeli Holocaust survivors during the Persian Gulf War: a study of psychological distress. *The American Journal of Psychiatry*, 149, 1707-1710.
- Shallcross, A.J., Ford, B.Q., Floerke, V.A. & Mauss, I.B. (2013). Getting better with age: The relationship between age, acceptance and negative affect. *Journal of Personality and Social Psychology*, 104, 4, 734-749.
- Stein, M.B., Walker, J.R., Hazen, A.L. & Forde, D.R. (1997). Full and partial posttraumatic stress disorder: findings for a community survey. *American Journal of Psychiatry*, 154, 8, 1114-1119.
- Stevens, N.R., Gerhart, J., Goldsmith, R.E., Health, N.M., Chesney, S.A. & Hobfoll, S.E. (2013). Emotion regulation difficulties, low social support and interpersonal violence mediate the link between childhood abuse and posttraumatic stress symptoms. *Behavior Therapy*, 44, 152-161.
- Summers, M., Hyer, L., Boyd, S. & Boudewyns, P. (1996). Diagnosis of later-life PTSD among elderly combat veterans. *Journal of Clinical Gerontology*, 2, 103-115.
- Thomsen, D.K., Mehlen, M.Y., Viidik, A., Sommerland, B. & Zachariae. (2005). Age and gender differences in negative affect-is there a role for emotion regulation? *Personality and Individual Differences*, 38, 1935-1946.

- Thorp, S.R., Sones, H.M. & Cook, J.M. (2011). Posttraumatic stress disorder among older adults. In K.H. Sorocco & S. Lauderdale (Eds.), *Cognitive behavior therapy with older adults: Innovations across care settings*. Springer Publishing Company.
- Trouillet, R., Gana, K., Lourel, M. & Fort, I. (2009). Predictive value of age for coping: The role of self-efficacy, social support satisfaction and perceived stress. *Aging & Mental Health*, 13, 3, 357-366.
- Urry, H.L. & Gross, J.J. (2010). Emotion regulation in older age. *Current Directions in Psychological Science*, 19, 6, 352-357.
- Wagnild, G. & Young, H.M. (1990). Resilience among older women. *The Journal of Nursing Scholarship*, 22, 4, 252-5.
- Waysman, M, Schwarwald, J. & Soloman, Z. (2001). Hardiness: an examination of its relationship with positive and negative long term changes following trauma. *Journal of Traumatic Stress*, 14, 3, 531-48.
- Weathers, F.W., Litz, B.T., Herman, D.S., Huska, J.A. & Keane, T.M. (1993). *The PTSD Checklist (PCL): Reliability, validity and diagnostic utility*. Paper presented at the 9th Annual Conference of ISTSS, San Antonia.
- Yeung, D, Y., Fung, H.H. & Kam, C. (2012). Age differences in problem solving strategies: The mediating role of future time perspectives. *Personality and Individual Differences*, 53, 38-43.
- Yeung, D.Y., Wong, K.M. & Lok, D. P.P. (2011). Emotion regulation mediates age differences in emotions. *Aging & Mental Health*, 15, 3, 4141-418.
- Zigmond, A.S. & Snaith, R.P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica*, 67, 6, 361-70.

5. Appendix Section

5.1 Appendix 1 Author Guidelines: Aging & Mental Health

Aging & Mental Health is an international peer-reviewed journal publishing high-quality, original research. All submitted manuscripts are subject to initial appraisal by the Editor and if found suitable for further consideration, to peer-review by independent anonymous expert referees. All peer review is double blind and submission is online via [ScholarOne Manuscripts](#). We encourage the submission of timely review articles that summarize emerging trends in an area of mental health or aging, or which address issues which have been overlooked in the field. Reviews should be conceptual and address theory and methodology as appropriate.

Aging & Mental Health considers all manuscripts on the strict condition that

- the manuscript is your own original work, and does not duplicate any other previously published work, including your own previously published work.
- the manuscript is not currently under consideration or peer review or accepted for publication or in press or published elsewhere.
- the manuscript contains nothing that is abusive, defamatory, libellous, obscene, fraudulent, or illegal.

Manuscript preparation

1. General guidelines

- Manuscripts are accepted only in English. Any consistent spelling and punctuation styles may be used. Please use single quotation marks, except where ‘a quotation is “within” a quotation’. Long quotations of 40 words or more should be indented without quotation marks.
- Manuscripts may be in the form of (i) regular articles not usually exceeding **5,000 words** (under special circumstances, the Editors will consider articles up to 10,000 words), or (ii) short reports not exceeding **2,000 words**. These word limits **exclude** references and tables. Manuscripts that greatly exceed this will be critically reviewed with respect to length. Authors should include a word count with their manuscript.
- Manuscripts should be compiled in the following order: title page (including Acknowledgments as well as Funding and grant-awarding bodies); abstract; keywords; main text; references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figure caption(s) (as a list).

Please supply all details required by any funding and grant-awarding bodies as an Acknowledgement on the title page of the manuscript, in a separate Funding paragraph, as follows:

For single agency grants:

This work was supported by the <Funding Agency> under Grant <number xxxx>.

For multiple agency grants:

This work was supported by the <Funding Agency #1> under Grant <number xxxx>; <Funding Agency #2> under Grant <number xxxx>; and <Funding Agency #3> under Grant <number xxxx>.

- Structured [Abstracts](#) of not more than 250 words are required for all manuscripts submitted. The abstract should be arranged as follows: Title of manuscript; name of

journal; abstract text containing the following headings: Objectives, Method, Results, and Conclusion.

- Each manuscript should have 3 to 5 [keywords](#).
- Search engine optimization (SEO) is a means of making your article more visible to anyone who might be looking for it. Please consult our guidance [here](#).
- Section headings should be concise. The text should normally be divided into sections with the headings Introduction, Methods, Results, and Discussion. Long articles may need subheadings within some sections to clarify their content.
- All authors of a manuscript should include their full names, affiliations, postal addresses, telephone numbers and email addresses on the cover page of the manuscript. One author should be identified as the corresponding author. Please give the affiliation where the research was conducted. If any of the named co-authors moves affiliation during the peer review process, the new affiliation can be given as a footnote. Please note that no changes to affiliation can be made after the manuscript is accepted. Please note that the email address of the corresponding author will normally be displayed in the article PDF (depending on the journal style) and the online article.
- All persons who have a reasonable claim to authorship must be named in the manuscript as co-authors; the corresponding author must be authorized by all co-authors to act as an agent on their behalf in all matters pertaining to publication of the manuscript, and the order of names should be agreed by all authors.
- Biographical notes on contributors are not required for this journal.
- Authors must also incorporate a [Disclosure Statement](#) which will acknowledge any financial interest or benefit they have arising from the direct applications of their research.
- For all manuscripts non-discriminatory language is mandatory. Sexist or racist terms must not be used.
- Authors must adhere to [SI units](#). Units are not italicised.
- When using a word which is or is asserted to be a proprietary term or trade mark, authors must use the symbol ® or TM.
- Authors must not embed equations or image files within their manuscript.

2. Style guidelines

- [Description of the Journal's article style](#).

Font: Times New Roman, 12 point. Use margins of at least 2.5 cm (1 inch). Further details of how to insert special characters, accents and diacritics are available [here](#).

Title: Use bold for your article title, with an initial capital letter for any proper nouns.

Authors' names: Give the names of all contributing authors on the title page exactly as you wish them to appear in the published article.

Affiliations: List the affiliation of each author (department, university, city, country).

Correspondence details: Please provide an institutional email address for the corresponding author. Full postal details are also needed by the publisher, but will not necessarily be published.

Anonymity for peer review: Ensure your identity and that of your co-authors is not revealed in the text of your article or in your manuscript files when submitting the manuscript for review. Advice on anonymizing your manuscript is available [here](#).

Abstract: Indicate the abstract paragraph with a heading or by reducing the font size. Advice on writing abstracts is available [here](#).

Keywords: Please provide five or six keywords to help readers find your article. Advice on selecting suitable keywords is available [here](#).

Headings: Please indicate the level of the section headings in your article:

- First-level headings (e.g. Introduction, Conclusion) should be in bold, with an initial capital letter for any proper nouns.
- Second-level headings should be in bold italics, with an initial capital letter for any proper nouns.
- Third-level headings should be in italics, with an initial capital letter for any proper nouns.
- Fourth-level headings should also be in italics, at the beginning of a paragraph. The text follows immediately after a full stop (full point) or other punctuation mark.

Tables and figures: Indicate in the text where the tables and figures should appear, for example by inserting [Table 1 near here]. The actual tables and figures should be supplied either at the end of the text or in a separate file as requested by the Editor. Ensure you have permission to use any figures you are reproducing from another source. Advice on artwork is available [here](#). Advice on tables is available [here](#).

Running heads and **received dates** are not required when submitting a manuscript for review.

- If your article is accepted for publication, it will be copy-edited and typeset in the correct style for the journal.
- [Description of the Journal's reference style.](#)

APA should be used

[Guide to using mathematical scripts and equations.](#)

3. Figures

- Please provide the highest quality figure format possible. Please be sure that all imported scanned material is scanned at the appropriate resolution: 1200 dpi for line art, 600 dpi for grayscale and 300 dpi for colour.
- All figures must be numbered in the order in which they appear in the manuscript (e.g. Figure 1, Figure 2). In multi-part figures, each part should be labelled (e.g. Figure 1(a), Figure 1(b)).

5.2 Appendix 2 Participant Information Sheet

- **What is the purpose of the study?**

The aim of the study is to investigate the factors which may have a role in the relationship between traumatic life experiences (e.g. serious accidents, assaults or war time experiences) and psychosocial outcomes (e.g. depression, quality of life) in a group of older people who are attending psychological health services.

- **Who is conducting the study and why?**

The study is being conducted by a trainee Clinical Psychologist who is based at the University of Edinburgh and also works for NHS Tayside. The study forms part of the academic component to the Doctorate in Clinical Psychologist thesis which the trainee is completing.

- **Why have I been asked to take part?**

You have been asked to take part because you are currently receiving psychological treatment from a Clinical Psychologist within an NHS Psychological Therapies for Older People's Service. Your clinical psychologist has identified you as being suitable to take part in the study. However, it is your choice as to whether you participate or not and your treatment will not be affected by your decision. You can also change your mind at any time.

- **What will participation in the study involve?**

Your clinical psychologist will ask you at your next appointment if you have any questions about the study or if you want to take part. If you choose to take part then you will be asked to complete a consent form. A single appointment will then be arranged for you to meet with either your clinical psychologist or the researcher to complete some questionnaires. At this appointment, you will be asked questions about your experiences of trauma, how you cope with difficult feelings and your psychological health and quality of life. The questions asked are fixed and require you to answer on a numbered scale. This appointment should take between 30-45 minutes to complete. After this, you will be given the opportunity to ask any questions and to discuss any aspect of the interview that you have found difficult.

- **Will participation be confidential?**

If you agree to take part, then your personal details (e.g. your name and address) will be kept confidential. If you agree, we will also send a letter out to your GP and/or referring agent to let them know you have consented to take part in the study.

If you tell the researcher or your Clinical Psychologist about something which makes them worry about your safety or the safety of someone else then we may need to pass this information onto your clinical psychologist or GP, as per standard NHS procedures. However, if this were to happen, this would be discussed with you.

- **What will be done with any information I disclose?**

After the interview, the information you have given will be anonymised to protect your identity. It will then be put onto a computer programme along with the other participant's answers. All the information will then be analysed by the research team.

If you would like to see a copy of the write-up of the study after it is completed, then this can be arranged. If not, after you complete the questionnaires, you will not be contacted by the researcher again.

If you change your mind about taking part in the study after you have completed the questionnaires, then please contact the researcher or your clinical psychological who will ensure that the answers you have given are removed from the computer system.

- **What will happen to the results of the research study?**

The results of the study will be written up and submitted as part of the Doctorate in Clinical Psychology at The University of Edinburgh. After this, it will be submitted to a peer review journal and it would be hoped that it may help develop psychological services for older people or in developing more research in the future.

- **What are the advantages of taking part in the study?**

You may find that participating in the study is an interesting and worthwhile experience.

- **What are the disadvantages of taking part in the study?**

You may find that some of the questions may make you feel uncomfortable or could be upsetting. You do not need to answer any question you do not want to. After the interview, you will be given the opportunity to ask questions or to discuss anything you found upsetting. Your clinical psychologist will also be available should you wish to discuss this at a later appointment with them.

- **Who has reviewed the study?**

The East of Scotland Research Ethics Committee REC 2, which has responsibility for scrutinising all proposals for medical research on humans in Tayside, has examined the proposal and has raised no objections from the point of view of medical ethics. It is a requirement that your records in this research, together with any relevant records, be made available for scrutiny by monitors from the University of Edinburgh and NHS Tayside, whose role is to check that research is properly conducted and the interests of those taking part are adequately protected.

- **I don't agree with the study or I want to make a complaint**

If you don't agree with the study or want to make a complaint, then please contact:

Complaints and Feedback Team Lead
Complaints and Advice Team
Level 9
Ninewells Hospital
Dundee
DD1 9SY
Freephone: 0800 027 5507
Email: complaints.tayside@nhs.net

You can also speak to the researcher's supervisor if you have any concerns about the research:

1. Dr Rhiannon Howie-Davies, Clinical Psychologist
NHS Older People's Psychological Services
POA Office, HUB
Murray Royal Hospital

Muirhall Road
01382 306156
PH2 7BH
Rhiannon.howie-davies@nhs.net

2. Professor Kevin Power, Head of Service
Psychological Therapies
7 Dudhope Terrace
Dundee
DD3 6HH
01382 306156
kevin.power@nhs.net

3. Dr Nuno Ferreira, Lecturer
School of Health in Social Science
University of Edinburgh
Medical School
Teviot Place
Edinburgh
EH8 9AG
01316503898
Nuno.ferreira.ed.ac.uk

- **What happens next?**

Attached to this information sheet is a 'Consent to Contact' form. If you are interested in participating or you would like further information, then please complete this form and give it to your Clinical Psychologist at your next appointment. Please keep the information sheet. Your Clinical Psychologist will ask you to complete a consent form. They will then either arrange an appointment with you to complete the questionnaires or pass your details to the researcher who will contact you to arrange an appointment, via your preferred method. This appointment can take place either at the clinical setting you attend or at your home at a time or place convenient to you. If you contact the researcher to discuss the study, or complete the contact details form, then this does not mean you need to take part.







- **Questions?**

If you have any questions about the study or about taking part then please contact the researcher or ask your Clinical Psychologist. Before and after the interview, you will also be given an opportunity to ask any questions.

Thank you for reading this and for considering taking part in the study.

5.3 Appendix 3 Participant Consent Form

Please initial each box if you agree with the statement

- I have read and understood the Participant Information Sheet (Version 1, 17/01/14) and have had the opportunity to ask questions. 
- I know that taking part in the study is voluntary and that I can withdraw at any time without giving a reason. 
- I know that taking part or not taking part in the study will not affect the care I receive from the NHS at the present time or in the future. 
- I understand that the study involves me meeting with either the researcher or my clinical psychologist on a one-off basis to complete questionnaires. 
- I give permission for my GP and/or referring agent to be notified that I am taking part in the study. 
- I understand that all information given to me in this study will be kept confidential with only the research team having access to it. 

- **I understand that relevant sections of my medical notes and data collected during the study may be looked at by individuals from The University of Edinburgh or from NHS Tayside, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records.**



- **I agree to take part in this study.**



Participant's Name:_____

Participant's Signature:_____

Date:_____

I would like a copy of the results of the study *YES/NO (*delete as appropriate)

If YES, I would like these results *POSTED TO ME/EMAILED TO ME (*delete as appropriate)

Name of Clinical Psychologist:_____

Clinical Psychologist's Signature:_____

Date:_____

5. 4 Appendix 4 Demographic Information Sheet

Please complete the questions below:

- 1) **Age:** _____
- 2) **Gender:** Male/Female
- 3) **Previous psychological/psychiatric inpatient treatment:** Yes/No
- 4) **Previous psychological/psychiatric outpatient treatment:** Yes/No
- 5) **Health board:** Tayside/Lanarkshire/Fife
- 6) **Postcode:** _____

5.5 Appendix 5 Ethics Correspondence and Approvals

EoSRES



Research Ethics Service

East of Scotland Research Ethics Service (EoSRES) REC 2

Tayside Medical Sciences Centre (TASC)
Residency Block C, Level 3
Ninewells Hospital & Medical School
George Pirie Way
Dundee DD1 9SY

Miss Kirsty McCluskey
Trainee Clinical Psychologist
NHS Tayside
Psychological Therapies Services

7 Dudhope Terrace
Dundee
DD3 6HH

Date: 07 April 2014
Your Ref:Our Ref: LR/14/ES/0043
Enquiries to: Mrs Lorraine Reilly
Direct Line: 01382 383878
Email: eosres.tayside@nhs.net

Dear Miss McCluskey

Study title:	What factors have a role in the relationship between traumatic life experiences and psychosocial outcomes in a clinical group of older people?
REC reference:	14/ES/0043
Protocol number:	n/a
IRAS project ID:	138018

The Research Ethics Committee reviewed the above application at the meeting held on 01 April 2014. Thank you, Professor Kevin Power & Dr Rhiannon Howie-Davies for attending to discuss the application.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details, unless you expressly withhold permission to do so. Publication will be no earlier than three months from the date of this favourable opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to withhold permission to publish, please contact the REC Manager Mrs Lorraine Reilly, lorraine.reilly@nhs.net.

Ethical opinion

1. The committee required clarification as to the definition of the age limit of older people as it was not stated in the application form – Dr Howie-Davies confirmed there were no upper age limit as adults who attended the older mental health services consisted of adults over the age of 65 years old.
2. The Committee noted A14-1 of the application form „In which aspects of the research process have you actively involved ...' stated that the CI would request that a non-clinical sample of older people complete the questionnaires to gain information about acceptability of the measures and also to better predict a completion time and asked who had been involved – Miss McCluskey confirmed that she had undertaken the measures with her uncle regarding completion of the questionnaires in order to check for suitability and time to complete and it was found that she had perhaps over estimated the completion time but felt it was better to over-estimate rather than under-estimate. Professor Power stated that he usually asked his students to involve at least six people to try out the measures with prior to the start of the study to ensure timeline for completion of questionnaires was realistic. He also stated that the questionnaires had been used in previous studies and the administration was tailored to how the individual functioned. Professor Power noted that the application form stated that the investigator would go through every item with the participant however that would not be the case as some of the questionnaires were straight forward, however some of the trauma questionnaires would be undertaken with the researcher as a semi-structured interview in order to minimise distress and demand on the participant.
3. The Committee commented that the volume of questionnaires could be perceived as questionnaire overload – Professor Power confirmed that completion time was perhaps over estimated but participants would not be expected to complete all the questionnaires without a break. Miss McCluskey confirmed that participants usually wanted to talk about some aspects of the questionnaires i.e. trauma and the timescale was over estimated to include discussion.
4. The Committee queried the sample size of 71 from a pool of 150 which would mean a near 50% cut rate which seemed quite high – Miss McCluskey confirmed that they would be recruiting in Tayside however they had another two additional sites which were not included in the figures, NHS Fife and NHS Lanarkshire which would added if the recruitment target was not reached in Tayside. The Committee felt that 71 was a fair size number and asked the researcher if she was comfortable with the number – Miss McCluskey confirmed that it was a recommended sample size from literature guidance in order to achieve three predictor variables.
Professor Power confirmed that they had been looking at mediation and moderation models over the last 3-4 years in quite diverse groups and the numbers used showed no problems at all. If the student was not able to achieve the sample size in the timeframe some students requested an extended timeframe to complete their target however there was usually enough data for an academically powered study with 45-50 participants.
5. Professor Power apologised for the statement in A33-1 of the application form as he felt it was an ageist statement „As this study is recruiting older people, the items on the questionnaire will be presented orally because some participants may have difficulties completing the questionnaires independently'.

The members of the Committee present gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

Ethical review of research sites

NHS Sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see “Conditions of the favourable opinion” below).

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

1. Regarding the Participant Information Sheet (PIS):

- Please adapt and insert the appropriate paragraph below under „Who has reviewed the study?’

„The East of Scotland Research Ethics Committee REC 2, which has responsibility for scrutinising all proposals for medical research on humans in Tayside, has examined the proposal and has raised no objections from the point of view of medical ethics. It is a requirement that your records in this research, together with any relevant records, be made available for scrutiny by monitors from the <<sponsor>> and NHS

<<organisation/Trust/Healthboard>>, whose role is to check that research is properly conducted and the interests of those taking part are adequately protected.’

2. Regarding the Consent Form:

- Please adapt appropriately and insert statement below:

I understand that relevant sections of my medical notes and data collected during the study may be looked at by individuals from (Company or sponsor) or from NHS, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records.

Please submit a revised PIS and Consent Form which should include a new version number and new full date as a footer.

You should notify the REC in writing once all conditions have been met (except for site approvals from host organisations) and provide copies of any revised documentation with updated version numbers. The REC will acknowledge receipt and provide a final list of the approved documentation for the study, which can be made available to host organisations to facilitate their permission for the study. Failure to provide the final versions to the REC may cause delay in obtaining permissions.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission (“R&D approval”) should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>.

Where a NHS organisation’s role in the study is limited to identifying and referring potential participants to research sites (“participant identification centre”), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database within 6 weeks of recruitment of the first participant (for medical device studies, within the timeline determined by the current registration and publication trees).

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non clinical trials this is not currently mandatory.

If a sponsor wishes to contest the need for registration they should contact Catherine Blewett (catherineblewett@nhs.net), the HRA does not, however, expect exceptions to be made. Guidance on where to register is provided within IRAS.

It is responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Approved documents

The documents reviewed and approved at the meeting were:

Document	Version	Date
Evidence of insurance or indemnity		25 June 2013
GP/Consultant Information Sheets	1	17 January 2014
Investigator CV – Professor Kevin Power		
Investigator CV – Dr Rhiannon Howie-Davies		
Investigator CV – Miss McCluskey		
Letter from Sponsor		12 March 2014
Letter of invitation to participant	1	17 January 2014
Other: WHOQOL-OLD Final Manual		
Participant Consent Form: Consent to Contact	1	17 January 2014
Participant Consent Form: Consent to Participate	1	17 January 2014
Participant Information Sheet	1	17 January 2014
Protocol	1	17 January 2014
Questionnaire: Demographic	1	17 January 2014
Questionnaire: HADS		
Questionnaire: Trauma History		
Questionnaire: PCL-Civilian		
Questionnaire: CD-RISC 01-01-13[
Questionnaire: DERS		
REC application		07 March 2014

Membership of the Committee

The members of the Ethics Committee who were present at the meeting are listed on the attached sheet.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document “After ethical review – guidance for researchers” gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- ☐ Notifying substantial amendments
- ☐ Adding new sites and investigators
- ☐ Notification of serious breaches of the protocol
- ☐ Progress and safety reports
- ☐ Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

Feedback

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

Further information is available at National Research Ethics Service website > After Review

14/ES/0043:

Please quote this number on all correspondence

We are pleased to welcome researchers and R & D staff at our NRES committee members’ training days – see details at <http://www.hra.nhs.uk/hra-training/>

Yours sincerely



Ms Tara Graham Chair

cosres.tayside@nhs.net

Enclosures:

List of names and professions of members who were present at the meeting and those who submitted written comments “After ethical review – guidance for researchers”

Copy to:

Charlotte Clark, University of Edinburgh
NHS Tayside R&D office

East of Scotland Research Ethics Service REC 2

Attendance at Committee meeting on 01 April 2014

Committee Members:

Name	Profession	Present	Notes
Ms Tara Graham	Research & Service Development Psychologist	Yes	Chair
Dr Anthony Davis	Consultant Anaesthetist	Yes	Vice-chair
Dr Roberta Littleford	Senior Clinical Trials Manager	No	Alternate Vice-chair, apologies received
Kenna Bisset	Student	Yes	
Mrs Sandra Campbell	Nurse Consultant for Cancer & Palliative Care	Yes	
Mrs Katrina Fraser	Rotational Midwife	No	Apologies received
Mrs Anne Gillen	Research Manager	Yes	
Mr Dougie McPhail	Primary Care Development Pharmacist	No	Apologies received
Mrs Irene McTaggart	Senior Lecturer	No	Apologies received
Dr Stuart Paterson	Consultant Physician	Yes	
Mr J Angus Scott	Consultant Ophthalmologist	No	Apologies received
Mrs Gail Watson	Senior Clinical Research Associate (SCRA)	Yes	
Mr Jeremy Wickins	Lecturer in Law	No	Apologies received

Also in attendance:

Name	Position (or reason for attending)
Mrs Caroline Ackland	Scientific Officer, Research Ethics Service
Mrs Lorraine Reilly	Senior Co-ordinator

East of Scotland Research Ethics Service (EoSRES) REC 2

(Formerly Fife & Forth Valley REC)
Tayside Medical Sciences Centre (TASC)
Residency Block C, Level 3
Ninewells Hospital & Medical School
George Pirie Way
Dundee DD19SY

Miss Kirsty McCluskey
Trainee Clinical Psychologist
NHS Tayside
Psychological Therapies Services
7 Dudhope Terrace
Dundee
DD3 6HH

Date: 25 April 2014
Your Ref:
Our Ref: **AG/14/ES/0043**
Enquiries to: Mrs Arlene Grubb
Extension: Ninewells extension:
Direct Line: 2283848
Email: 01382 383848
Eosres.tayside@nhs.net

Dear Miss McCluskey

Study title: What factors have a role in the relationship between traumatic life experiences and psychosocial outcomes in a clinical group of older people?
REC reference: 14/ES/0043
Protocol number: n/a
IRAS project ID: 138018

Thank you for your letter of 23 April 2014. I can confirm the REC has received the documents listed below and that these comply with the approval conditions detailed in our letter dated 07 April 2014

Documents received

The documents received were as follows:

Document	Version	Date
Participant Consent Form	2	21 April 2014
Participant Information Sheet	2	21 April 2014

Approved documents

The final list of approved documentation for the study is therefore as follows:

Document	Version	Date
Evidence of insurance or indemnity		25 June 2013
GP/Consultant Information Sheets	1	17 January 2014
Investigator CV		
Investigator CV		
Investigator CV		



Letter from Sponsor		12 March 2014
Letter of invitation to participant	1	17 January 2014
Other: WHOQOL-OLD Final Manual		
Participant Consent Form: Consent to Contact	1	17 January 2014
Participant Consent Form: Consent to Participate	1	17 January 2014
Participant Information Sheet	1	17 January 2014
Protocol	1	17 January 2014
Questionnaire: Demographic	1	17 January 2014
Questionnaire: HADS		
Questionnaire: Trauma History		
Questionnaire: PCL-Civilian		
Questionnaire: CD-RISC 01-01-13[
Questionnaire: DERS		
REC application		07 March 2014

You should ensure that the sponsor has a copy of the final documentation for the study. It is the sponsor's responsibility to ensure that the documentation is made available to R&D offices at all participating sites.

14/ES/0043

Please quote this number on all correspondence

Yours sincerely

Arlene Grubb Assistant Co-ordinator

Eosres.tayside@nhs.net

Copy to:

Charlotte Clark, University of Edinburgh
Mrs Elizabeth Coote, Tayside Health Board

02 May 2014

Miss Kirsty McCluskey
Trainee Clinical Psychologist
NHS Tayside
Psychological Therapies Service
7 Dudhope Terrace
Dundee
DD3 6HH

Dear Miss McCluskey,

R & D MANAGEMENT APPROVAL - TAYSIDE

Title: What factors have a role in the relationship between traumatic life experiences and psychosocial outcomes in a clinical group of older people?

Chief Investigator: Kirsty McCluskey

Principal Investigator: Kirsty McCluskey

Tayside Ref: 2014PZ04

NRS Ref: NRS14/MH129

REC Ref: 14/ES/0043

EudraCT Ref: N/A

CTA Ref: N/A

Sponsor(s): University of Edinburgh

Funder(s): Unfunded

Many thanks for your application to carry out the above project here in NHS Tayside. I am pleased to confirm that the project documentation (as outlined below) has been reviewed, registered and Management Approval has been granted for the study to proceed locally in Tayside.

Approval is granted on the following conditions:-

- ALL Research must be carried out in compliance with the Research Governance Framework for Health & Community Care, Health & Safety Regulations, data protection principles, statutory legislation and in accordance with Good Clinical Practice (GCP).
- All amendments to be notified to TASC R & D Office.
- All local researchers must hold either a Substantive Contract, Honorary Research Contract, Honorary Clinical Contract or Letter of Access with NHS Tayside where required (http://www.nihr.ac.uk/systems/Pages/systems_research_passports.aspx).
- TASC R & D Office to be informed of change in Principal Investigator, Chief Investigator or any additional research personnel locally.

- Notification to TASC R & D Office of any change in funding.
- As custodian of the information collated during this research project you are responsible for ensuring the security of all personal information collected in line with NHS Scotland IT Security Policies, until destruction of this data.
- All eligible studies will be added to the UKCRN Portfolio <http://public.ukcrn.org.uk/>. Recruitment figures for eligible studies must be recorded onto the Portfolio every month: This is the responsibility of the lead UK site. If you are the lead, or only, UK site, we can provide help or advice with this. For information, contact Sarah Auld – (01382) 383822 – sarah.auld@nhs.net or Liz Livingstone – (01382) 383872 – elivingstone@nhs.net.
- Annual reports are required to be submitted to TASC R & D Office with the first report due 12 months from date of issue of this management approval letter and at yearly intervals until completion of the study.
- Notification of early termination within 15 days or End of Trial within 90 days followed by End of Trial Report within 1 year to TASC R & D Office.
- You may be required to assist with and provide information in regard to audit and monitoring of study.

Please note you are required to adhere to the conditions, if not, NHS management approval may be withdrawn for the study.

Approved Documents

Document	Version	Date
Protocol	1	17/01/14
IRAS R & D Form		
SSI Form		
PIS	2	21/04/14
Consent to participate	2	21/04/14
Consent to contact	1	17/01/14
Letter of invitation to participants	1	17/01/14
GP/Consultant Information sheet	1	17/01/14
REC favourable opinion with conditions		07/04/14
REC compliance		25/04/14
HADS		
Trauma History		
PCL civilian		
CD-RISC 01-01-13		
DEERS		
WHOQOL-OLD instruction manual		
CV – Kirsty McCluskey		
CV – Kevin Power		
CV – Rhiannon Howie-Davies		
Insurance		25/06/13

May I take this opportunity to wish you every success with your project.

Please do not hesitate to contact TASC R & D Office should you require further assistance.

Yours sincerely,